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Sparring over SSL Microsoft, security experts debate severity of Internet Explorer vulnerability. PAGE 10.

Wireless LAN slam A key federal agency will soon issue a report critical of wireless LAN security. PAGE 12.

NetworkWorld

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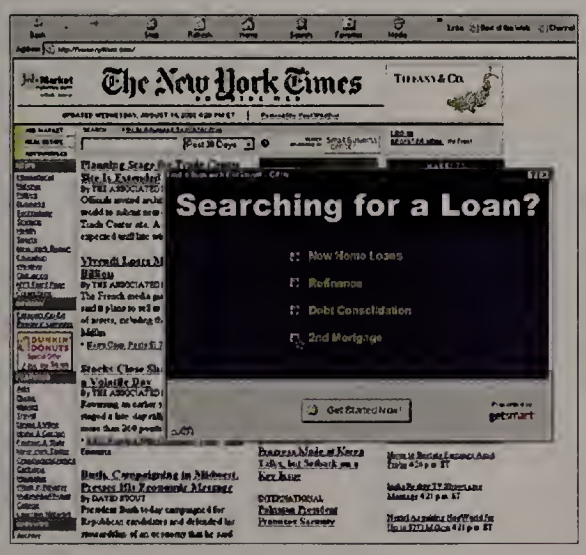
August 19, 2002 ■ Volume 19, Number 33

E-BUSINESS BATTLE

Critics decry spread of 'scumware' on the Web

■ BY ANN BEDNARZ



Gatorized: Pop-up ad for a loan advertisement appears over a page from *The New York Times* Web site, courtesy of Gator Advertising and Information Network.

It's an ugly issue with an equally dreadful name: scumware.

In general terms, scumware is software that surreptitiously changes the appearance of Web pages. It does so without the permission of Webmasters or Web site content owners — an act scumware makers justify by saying their software does not alter HTML programming code used to build Web sites. Rather, it affects what a visitor who has installed a scumware program sees on his desktop while surfing the Web.

Critics say scumware is harmful on multiple fronts: Web site operators can lose revenue; users might unwittingly sacrifice their privacy; and corporations have to deal with security vulnerabilities when their users download unauthorized applications.

Scumware usually is free, billed as a helpful utility to manage

See Scumware, page 62

Start-up looks to ease move to 64-bit

■ BY DENI CONNOR

AUSTIN — A start-up stacked with veteran industry players is hoping to give Intel-based server makers a run for their money with enterprise-class machines designed to ease the transition from 32- to 64-bit computing.

Newisys, founded two years ago by former IBM executives, has been demonstrating its first product, a dual-processor server that uses AMD's 32/64-bit Opteron processor. Opteron, code-named Hammer, is the processor AMD is bringing to market early next year in the hope of spiriting market share away from Intel's 64-bit Itanium.

"AMD made all the right decisions relative to compatibility, price/performance and the attributes we would like to see for [customers]," says Newisys CEO Phil Hester.

Hester is a veteran of IBM,

See Newisys, page 20

LinuxWorld spotlight on savings

■ BY PHIL HOCHMUTH

SAN FRANCISCO — The focus at last week's LinuxWorld Expo proved to be less about how open source can save the world from the clutches of powerful vendors wielding proprietary software and more about how it can save companies precious IT dollars.

Industry luminaries from Sun and Oracle used keynote speeches to tout their companies' Linux loyalty, and also to emphasize how open source software can deliver big savings and better performance for enterprise servers. Customers shared stories about how Linux can be, if not a panacea, at least a shot in the arm.

"In this economy, we're not spending a nickel on anything that won't pay back within 12 to 18 months," said Evan Bauer, CTO of global technology infrastructure at financial services and trading firm Credit Suisse First Boston, which recently converted a core trading application from Unix to Linux.

The decision to migrate came from a bottom-line reality.

"The population of our enterprise servers was increasing, and the cost to maintain those servers was rising while our revenue wasn't," Bauer said.

Over three months, Bauer said, Credit Suisse converted its

See Linux, page 61

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- Developing and refreshing new threat models to help counter constantly evolving security risks

Market Fact: *“Unisys security services, partnered with Microsoft products and solutions, provide our customers with highly secure and cost-effective mission-critical solutions.”*

—Sunil Misra, Managing Principal, Worldwide Security Practice, Unisys

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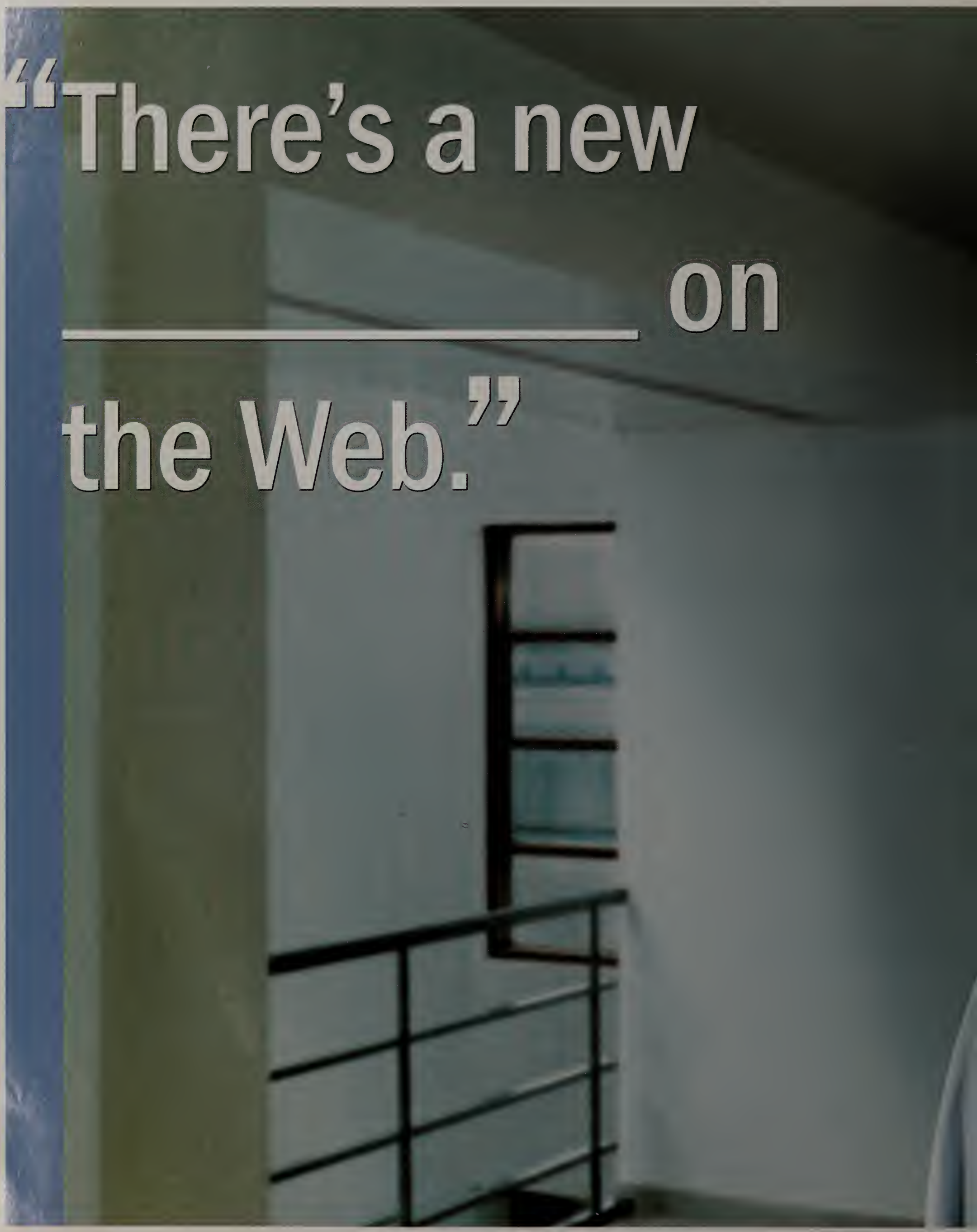
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APC's PowerStruXure UPS delivers lean and mean rack power.

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Compendium
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■ **CONTACT US** Network World, 118 Turnpike Road, Southborough, MA 01772; **Phone:** (508) 460-3333; **Fax:** (508) 490-6438; **E-mail:** nwnews@nww.com; **STAFF:** See the masthead on page 16 for more contact information. **REPRINTS:** (717) 399-1900

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News Bits

Agere pulling plug on optoelectronics

■ Agere Systems last week announced its intention to get out of the optoelectronics business and focus on making chips for communications network products. The moves will result in plant closings and 4,000 job losses by the end of next year, the company said. Optoelectronics components transform electrical signals into light and vice versa. They are used in products such as electric eye sensors and optical-fiber components for long-haul networks. "You don't have to be a genius to understand that the worldwide optoelectronics market is not a very good business right now," says John Dickson, CEO of Agere.

Microsoft readying Bluetooth keyboard, mouse

■ Microsoft has moved closer to release of a wireless keyboard and mouse set that relies on Bluetooth wireless network technology. The company, which has been slow in adding support for Bluetooth to its Windows operating systems, received approval for the product from the Federal Communications Commission earlier this month. The keyboard and mouse will come in a kit that also contains a Bluetooth transceiver that can be connected to a PC using a Universal Serial Bus connector. The set also will ship with a CD-ROM that includes Bluetooth support components for Windows. The operating system does not currently support the technology, although Microsoft said late last year that it intends to add support to Windows XP sometime in the latter half of this year. The company offers a wireless keyboard and mouse set that uses channels in the 27-MHz band, a much lower piece of the radio spectrum than the 2.4-GHz band in which Bluetooth operates.

Router sales reported down 6%

■ Worldwide router sales in the second quarter declined 6% over the previous quarter to $1.5 billion, according to figures from Dell'Oro Group. Declines in higher-end routers — those that support bandwidth of 1G bit/sec or more — offset gains in the lower end. The low-end router segment — those that support bandwidth of 900M bit/sec or less and feature WAN connection speeds up to T-1/E-1 — was the only segment with increasing sales. The leader continues to be Cisco, even though its router revenue declined 6% from the first quarter to $1.32 billion. But Cisco appears to have gained more than 2% share from the 85.5% it had in that quarter. No. 2 Juniper Networks' router sales dipped 10% to $94 million. The company's share remained about flat, dipping only 0.1%. No. 3 Unisphere, which Juniper acquired in May, saw its sales dive 22% sequentially, according to Dell'Oro.

Maxtor tosses in NAS towel

■ Maxtor announced last week that it is exiting the network-attached storage market. The company, which made MaxAttach 4000 and 6000 storage appliances that ranged in capacity from 320G bytes to more than 5.5 terabytes, is going to focus on its SCSI and ATA drives, and its external storage products. The NAS products are headed for the scrap heap — they will not be bought by any other storage vendor. "The company's NAS products are being discontinued because they were not profitable and for a number of other issues," says a Maxtor spokeswoman.

CERT flags CDE-related vulnerability

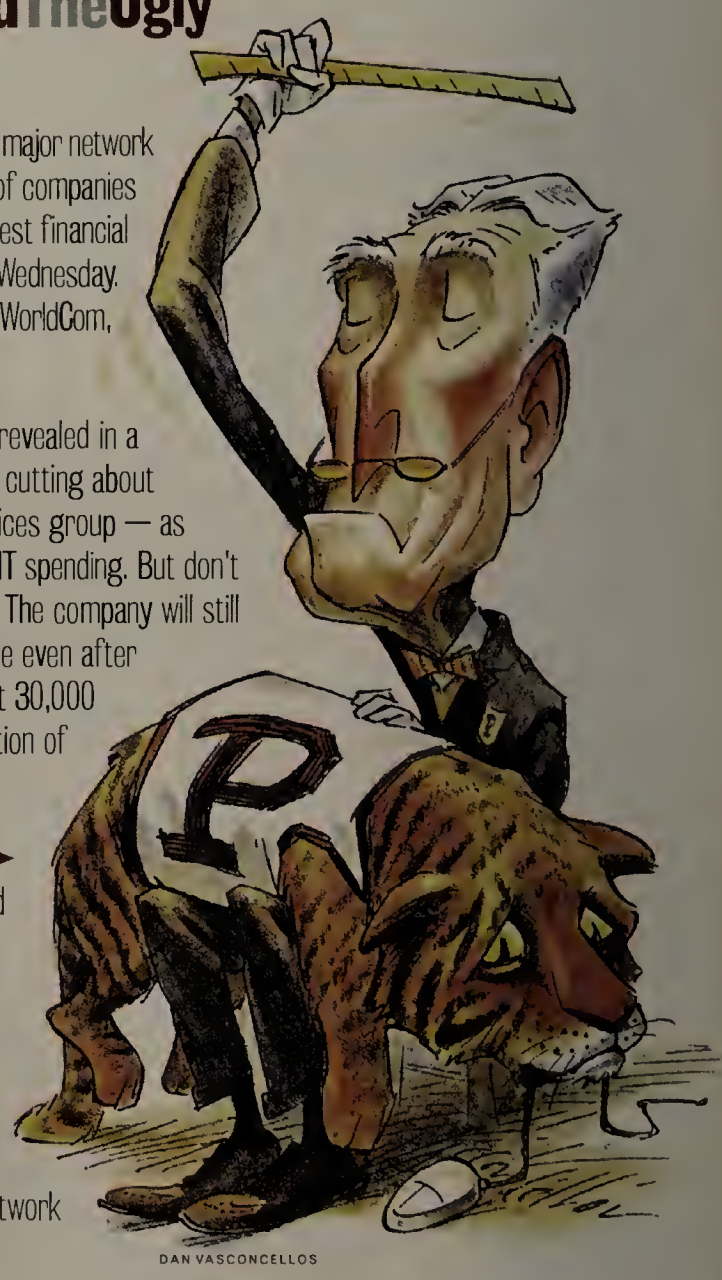
■ The CERT Coordination Center last week issued an alert that the Common Desktop Environment's CoolTalk RFC Database Server, the message brokering system that lets applications communicate across platforms, contains a buffer-overflow vulnerability that would let an attacker arbitrarily execute code to take over a system or launch a denial-of-service attack. The CDE-related vulnerability, discovered by security software vendor Entercept, affects Unix and Linux software from Caldera, Cray, Hewlett-Packard, IBM, SGI, Sun and Xi Graphics, which posted information on the CERT Web site on how to correct the problem.

TheGoodTheBadTheUgly

Hitting deadline. All the major network industry players on the SEC's list of companies that needed to sign off on their latest financial filings actually hit the deadline last Wednesday. (A few notables, such as Qwest and WorldCom, filed acceptable alternatives.)

Slimming down. IBM revealed in a financial filing last week that it is cutting about 15,600 jobs — largely in its services group — as a result of cutbacks in corporate IT spending. But don't worry about IBM withering away. The company will still employ more than 300,000 people even after the departures and will gain about 30,000 employees via its planned acquisition of PwC Consulting.

Ivy league rivalry. ➤ After an internal investigation and even FBI involvement, Princeton University last week said it has disciplined several employees for what was deemed inappropriate access of a student admissions Web site at Yale this spring. Yale, for its part, is re-examining its network security and privacy policies.



DAN VASCONCELLOS

What's wrong with "Minority Report"

Jane Pickard notes the movie's networking flaws: "I noticed that you guys are still using disks to transfer files from one user station to another. I mean, it's in the same room, you know? You guys could just get a cheap-o wireless card or something, save you the extra step. Especially since sometimes I guess you guys are really in a time crunch, right?"

Read more at www.nwfusion.com, DocFinder: 1839.

IBM releases eServer x205

■ IBM last week unveiled a server for small and midsize businesses that contains fault-tolerance and self-managing capabilities not seen before in systems of this size, the company says. The eServer x205, a tower-based server equipped with a Pentium 4 processor, is 4U (7 inches high) and runs either factory-installed Windows 2000 Server or Red Hat Linux. The x205 contains technologies from IBM's self-managing Project Eliza, which helps IT managers administer, tune and adapt the server for its environment. In addition, the server contains hot-swappable disk drives and supports remote management via the IBM Remote Supervisor Adapter. It also uses IBM Director, an IBM systems management program. The x205 is a member of IBM's x200 family of entry-level servers, which start at $680.

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Debate flares over Microsoft's SSL glitch

■ BY JOHN FONTANA

After the dust settled around last week's revelation of a security flaw that affects Microsoft's Web browser, network executives were left with another patch to apply to their Windows operating systems and a debate about the severity of the problem.

Those who don't apply the patch will risk leaving the door open for savvy hackers to grab data such as credit-card numbers encrypted using Secure Sockets Layer (SSL), a standard for securing traffic on the Internet. The flaw is that Microsoft's Internet Explorer does not validate certificates used to identify a Web site as part of SSL transactions. That can let hackers who create bogus certificates put themselves in the middle of a supposedly secure transaction and intercept data.

Microsoft says the SSL problem resides in the Windows operating system and not its browser, although the problem manifests itself through that application. Therefore, Microsoft is working on a patch for Windows 98, ME, NT4, 2000 and XP that would change the way the operating system handles SSL certificate verification. The firm did not say when the patch would be available.

"This SSL flaw has been described as an [Internet Explorer] problem, but it is a Windows issue. It's in the crypto of the operating system so we have to patch the [operating system]," says Scott Culp, manager of the Microsoft Security Response Center. "[Internet Explorer] is a consumer of those crypto services." Culp says the flaw only affects Internet Explorer.

Culp says the flaw is in operating system code that performs validation of SSL certificate chains, the hierarchy of trust that cascades from certificate authorities such as VeriSign. The operating system must be patched because Internet Explorer does not have its own cryptography code, instead relying on the operating system for that service, Culp says.

Microsoft officials say they have yet to determine how the flaw affects versions of Internet Explorer for Unix and Macintosh.

Culp says the attack is complex to carry out because a hacker would have to trick a user onto a bogus Web site or redirect Internet traffic by hacking into the DNS, which governs the routing of Internet traffic.

But independent researcher Mike Benham, who discovered the flaw, says exploits are not far-fetched and network executives should take the threat seriously.

"These types of attacks are what SSL was meant to protect against," Benham says. "If these types of attacks were so hard, no one would have to use SSL."

Cryptography expert Bruce Schneier, CTO of Counterpane Internet Security, says the threat of redirecting or tricking users onto rogue Web sites is real. "Just this week my wife got an e-mail trying to direct her onto a forged eBay site," Schneier says. "This type of social engineering is more common than many think because people don't know what an IP address is or where it should be taking them."

But VeriSign officials say a hacker needs a valid SSL certificate to create a bogus certificate. "In order to obtain a valid certificate from us you need to identify yourself," says Ben Golub, senior vice president for trust and payment services at VeriSign, which has 400,000 certificates in circulation. "That makes you easy to trace."

VeriSign scans the Web regularly for expired and revoked certificates, and searches for bogus certificates as well, he says.

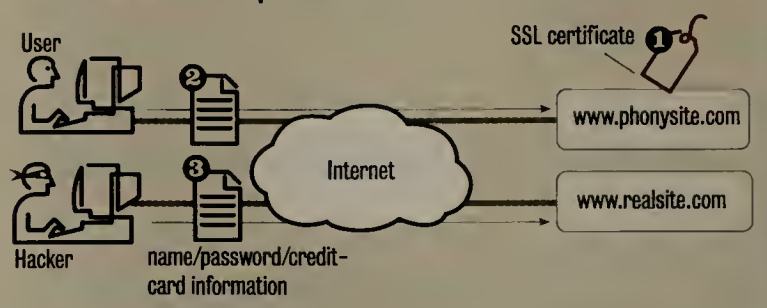
Even successful exploits may bear little fruit, some say.

Exploiting the flaw to crack SSL remote-access security would be a lot of effort for little results, says Elad Baron, CEO of SSL remote-access vendor Whale Communications. The attacker would have to divert traffic from the real server to a phony one that appeared to be the real site, he says. The user then would submit his username and password, which the hacker would use to gain access to the protected site. Then the attacker would be limited to just the resources that were available to the person whose user name and password were hijacked.

"When you are talking about e-mail, what are you going to get? There are much easier ways to get someone's username and password in real life," Baron says. ■

Microsoft security shortcoming

An operating system flaw leaves Internet Explorer users susceptible to attacks when they use the browser's SSL capabilities.



1. An illicitly obtained SSL certificate is issued to a bogus Web site created by a hacker.
2. An Internet user is duped into connecting to the phony site and gives private information because Internet Explorer fails to detect the invalid certificate.
3. The hacker uses the private information to hack genuine sites, create false identities and run up bills.

Intel spinoff looks to boost processing power

■ BY JENNIFER MEARS

SAN DIEGO — A month ago, Randy Smerik was running a division within Intel's Communications Group and overseeing about a half-dozen projects centering on intelligent traffic management. Today, he's heading up an Intel spinoff that is focusing on high-speed content processing.

Smerik convinced Intel's management to spin off the company, and he incorporated it as Tarari last month. The company publicly launches this week with $13 million from Crosspoint Venture Partners and XMLFund in the bank; a new headquarters in San Diego; and a staff of 37. Intel holds a minority investment in Tarari. The spinoff plans to ship its first product, a PCI card that will boost network security processing, later this year.

Tarari is building what Smerik refers to as "content processors," specialized processing engines that can look inside packets and intelligently route traffic based on internal payloads. Tarari's core technology is a silicon platform that is based on reprogrammable hardware, ASICs and software that can be designed to process specific applications — and do it at gigabit speeds. Tarari plans to sell the plug-and-play devices to OEMs that would fit them into network equipment and servers to boost intelligent processing power.

Smerik wouldn't talk about partners or customers, although he says there are several alpha and beta tests under way. He says Tarari's product will make offerings from companies such as Cisco, IBM, F5 Networks, Symantec, Oracle, Microsoft and Hewlett-Packard run better.

Initially, Tarari will introduce specialized engines for network security and XML-based Web services, where Smerik's team sees the most need.

"Enterprises, data centers, service providers and telecommunications companies all want to raise the bar in how they can intelligently control and handle traffic," Smerik says.

"They want to put virus checking in the network," he says. "They want to have XML switching and XML processing on servers. And they want to do all that without bogging down the network, which is what happens today. We solve that pain."

Companies such as Array Networks, Nauticus Networks and Inkra all have products that speed Secure Sockets Layer (SSL) acceleration, and others such as DataPower Technologies and Sarvega tackle XML processing. Smerik looks at such companies not as competitors, but as possible partners.

Bruce Dick, a director at XMLFund, says Tarari is providing a flexible platform that will be able to address network bottlenecks.

"You look at the network environment and there are always various bottlenecks — it could be on the virus side or the XML side or SSL," Dick says. "This is a flexible platform architecture that allows people to build an appliance and start tackling one or more of those things in their unique fashion." ■

PROFILE: TARARI

Location:	San Diego
Incorporated:	July
Products:	Content processors
Employees:	37
Key personnel:	Former Intel executives Randy Smerik, president and CEO; Dave Finlay, vice president of sales and marketing; Jeff Carmichael, vice president of product development.
Financing:	$13M from Crosspoint Venture Partners and XMLFund. Intel also holds an equity investment.
Customers:	OEMs, systems integrators, ISVs
Fun fact:	Tarari is derived from the Urdu word Tarraari, which means speed and agility.

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Feds to clamp down on wireless LANs

■ BY ELLEN MESSMER

GAITHERSBURG, MD. — A federal agency is readying a report that will recommend against the U.S. government using wireless LANs — except when applying a long, detailed list of security controls.

Even though wireless LANs are a billion-dollar business and growing fast, reports such as the one coming out from the National Institute of Standards and Technology (NIST) continue to dog the technology.

Source say, the U.S. Department of Defense also is said to be considering restrictions on wireless LAN usage for classified and nonclassified environments, government.

"We don't use them yet because we've heard the bugs aren't out of them and we don't want to be the guinea pigs," says Alan Comins, CFO at retailer Carpetland in Los Angeles.

"Our IT consultant told us not to use them," he adds.

What NIST is advising

Among NIST's recommendations is that wireless LAN access points be located only where no unauthorized individuals can access them.

With freeware such as AirSnort, hackers have been known to access wireless LAN access points from up to 1,000 feet away.

NIST also suggests that agencies put firewalls between wireless and wire-based LANs. Another 50 or so recommendations will be included in the report, called "Wireless Network Security."

The NIST report arrives at a time when the IEEE is attempting to standardize on port authentication in 802.11 wireless LANs.

The proposed 802.1X standard addresses several authentication types, including passwords, certificates, media access control (MAC) addresses and the widely used Remote Authentication Dial-In User Service protocol. But 802.1Xs progress hasn't been smooth, with a University of Maryland professor cracking the technology earlier this year and companies such as Cisco and Funk Software battling over how to bolster it.

But it's critical to move ahead on 802.1X because the 802.11b specification, as the NIST report points out, lacks any "true authentication" of users. Only a user's wireless LAN-enabled device is authenticated via what's called the Service Set Identification (SSID).

The NIST report suggests that wireless LANs should include VPN clients and gateways for privacy and authentication. Wired Equivalent Privacy (WEP), the 802.11 standard for encryption, has been shown to be too easily broken using freeware such as WEPCrack.

Report cites helpful vendors

NIST singled out vendors such as Bluesocket and Vernier Networks as being among those that deliver products that can address wireless LAN security and privacy concerns.

Searching out wireless LAN vulnerabilities is becoming a business. One start-up, AirDefense, has catalogued what it says are 100 types of denial-of-service attacks jamming the airwaves with noise to shut down wireless LAN access points, 27 attacks to take over wireless LAN stations, 490 different probes to scan wireless LANs for weaknesses and 190 ways to spoof media access control (MAC) addresses and the dresses and SSIDs to assume the identity of another user.

"The MAC address is unique, so only one should be trying to come into the wireless LAN at a time," says Fred Tanvella, chief security officer at AirDefense, which developed a wireless LAN intrusion-detection sensor.

"So if someone is using a Cisco card and another a Lucent card, and they're trying to fake it, we can tell," he says.

Government contractor Science Applications International Corp. (SAIC) is experimenting with a "honeypot" to detect and trap hackers trying to break into wireless LANs from a distance (sometimes referred to as "war-driving"). The goal is to gather information about how hackers get in.

While SAIC officials declined to discuss the project in depth, it is known to be based on Cisco wireless LAN access points deployed in the Washington, D.C., area. ■

Wireless gotchas

Here are the top 10 problems with 802.11b wireless LANs, according to the National Institute of Standards and Technology:

1. Security features in vendor products are frequently not enabled and are poor in many cases.
2. Initialization vectors are short (24 bit). This causes the generated keystream to repeat, which allows for easy encryption of data for a moderately sophisticated adversary.
3. Forty-bit cryptographic keys are inadequate, allowing a brute-force attack.
4. Cryptographic keys are shared, making them easily compromised.
5. Cryptographic keys cannot be updated automatically and frequently.
6. The RC4 keystream is inappropriately used in the Wired Equivalent Privacy protocol, leaving it open to an attack to recover the key.
7. Packet integrity is poor, making message modification possible.
8. No user authentication occurs; only the device is authenticated.
9. Only Service Set Identification occurs — this identity-based method is highly vulnerable in a wireless system.
10. Device authentication is based on simple, one-way challenge response, subject to the "man-in-the-middle" attack.

Correction

■ In the story "Server ties Web to [illegible] conferencing" (Aug. 12, page 17), eDial's newest product should have been named as AudioPresenter 3.0

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■ THIS WEEK'S QUESTION:

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Adtran dips toe in router market

New box has similar look to a Cisco offering, but differs on price.

■ BY TIM GREENE

HUNTSVILLE, ALA. — Adtran has begun offering customers an alternative to Cisco's 1700 series branch-office routers that boasts a lower price and a similar command-line interface, though fewer advanced features.

At $1,000, Adtran's NetVanta 3200 base model is priced one-third less than a typical Cisco 1700 series router. Other models of the Cisco 1700 cost thousands of dollars.

The NetVanta 3200 command-line interface is designed so users familiar with Cisco's CLI will have little trouble figuring out how to control the Adtran boxes. Adtran says this similarity eliminates the need to retrain technicians schooled on Cisco routers.

The company has set up a Web site (www.dare2compare.adtran.com) where customers can familiarize themselves with Adtran's management interface by configuring a simulated NetVanta 3200.

The Adtran router has a single WAN slot that can hold cards for

Adtran's NetVanta 3200 branch-office router costs less than the nearest Cisco alternative.

56K bit/sec, T-1 or symmetric high-speed DSL. It has one 10/100M bit/sec Ethernet port and supports dial backup.

The router provides an alternative for companies that don't require all the latest bells and whistles on their branch routers, according to Paul Strauss, an analyst with IDC. "Adtran's principle is to make reliable devices at a pretty good price," he says.

What the routers can't do is tag IP voice traffic for special treatment across a network built of all Cisco gear, as Cisco's 1700s can. More fundamentally, while Adtran's routers require a separate device to support VPN traffic, Cisco's do not. Adtran does, however, plan to add VPN capabilities.

Spark Engineering in Richmond, Va., began using a 3200 just for connecting to a fractional T-1 Internet link. "It was a good deal compared with Cisco," says Bill Riley, a managing partner at the company.

Vendors sell about $2 billion in branch-office routers per year, Strauss says. Cisco leads the way, followed by a bevy of smaller players such as Linksys, Efficient, Vanguard Managed Systems and Zyxel.

While this is Adtran's first standalone router, the company has built other products that include routers, such as its NetVanta VPN gear and Total Access integrated access devices.

The NetVanta 3200 includes a stateful inspection firewall that supports network address translation. The device also supports Dynamic Host Configuration Protocol, frame relay and point-to-point protocol. It features standard IP routing protocols Routing Information Protocol Versions 1 and 2, static routing and bridging.

NetVanta 3205, which costs $1,100, is a rack-mountable version of the desktop Net Vanta 3200.

Adtran: www.adtran.com

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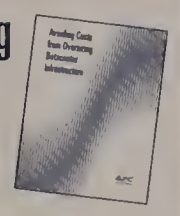

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NetQoS mgmt. packs taps into Cisco

Separately, NetBotz bolsters management of wiring closets, server rooms.

■ BY DENISE DUBIE

AUSTIN, TEXAS — NetQoS this week will debut a software and hardware package designed to help network executives pinpoint bandwidth-hogging applications that slow down a Cisco-based network's performance.

NetQoS' NetFlow Manager uses a combination of hardware appliances and embedded reporting software to help customers manipulate and make sense of the data they collect from Cisco routers that use the NetFlow metering protocol. NetFlow is part of Cisco's IOS that collects and measures data as it enters specific routers or switch interfaces. The data can be used to monitor key applications, including accounting, billing and network planning, for corporate or service provider customers.

However useful that data is, detractors say NetFlow can generate too much information and slow down the router it runs on.

"There are performance issues with using NetFlow," says Bill Gassman, a senior analyst with Gartner. "You can have a router or a monitor, but router performance may suffer when the [NetFlow] monitor is operating."

Rolf Berge, manager of engineering engagement at Schlumberger in Houston, Texas, says the amount of data generated out of NetFlow could overwhelm a network manager not familiar with the protocol. Berge wanted to enable NetFlow on his network — rather than upgrading 45 NetScout probes — but he says he first needed a product to manage the proprietary protocol.

"Our investment was a lot less than if we had gone with buying more traditional probes," Berge says. "And we'll get a lot more visibility into the network using NetFlow."

NetQoS uses three appliances to manage traffic: a data collector that sits near core network routers; a data interpreter that is connected to a hub router; and a server with reporting software.

The collectors passively monitor NetFlow traffic, compress the data and send it to the interpreter appliance, which analyzes the information. The interpreter then sends the data to the server, from which network administrators access traffic and application data via a Web browser. NetQoS also sells the server product as stand-alone software that can run on a Windows 2000 box.

Cisco and management vendors such as Concord Communications and InfoVista offer management tools for NetFlow, but they typically have focused on service provider networks. NetQoS says NetFlow Manager is designed for corporate customers.

Available now, NetFlow Manager costs about $80,000, depending on network configuration.

Environmental focus

In other management technology news, NetBotz last week introduced software designed to centrally manage the company's WallBotz and RackBotz environmental management appliances.

NetBotz Central 1.3 lets network administrators view and manage data collected from many appliances from one console via the Web.

Traffic jam

NetQoS' NetFlow Manager system lets network managers pinpoint traffic bottlenecks on their networks.

The latest feature is a software add-on that will lets users store the data collected by the remote monitors with other data stored on their networks in Oracle, Microsoft SQL Server and Linux My SQL databases. In the past, the data collected could be stored locally on the NetBotz appliance.

The WallBotz and RackBotz appliances monitor network closets, server rooms or remote offices for temperature, humidity and power consumption. The tools alert network managers when predefined thresholds are missed. The appliances also feature a camera that periodically sends photos of the activity in the remote location.

The appliances have Web server software embedded in them, letting network administrators tap the data collected on an individual device with any Web browser.

NetBotz currently is offering its hardware and software via the NetBotz PilotPack 310, which costs about $10,000 with a 30-day money-back guarantee. NetBotz appliances range in price from $800 to $8,000.

NetQoS: www.netqos.com; NetBotz: www.netbotz.com

Telecom collapse inspires back-up services

■ BY MICHAEL MARTIN

The spate of carrier collapses that culminated last month with WorldCom's bankruptcy filing has opened a new opportunity for other service providers: selling business customers low-cost back-up network services.

Last week, OpenReach and Williams Communications rolled out offerings designed to keep business networks up and running if a primary network connection goes down.

Williams' offering, dubbed Hot Standby, lets customers create a back-up network that will be turned on only if a primary network goes down. Customers foot the bill for the local-loop installation and local-loop monthly charges, but pay only 10% of the normal remaining cost for ATM network services and 25% of the remaining cost for frame relay services, says Michael Kaste, a product marketing manager with Williams.

Cheap backup

Williams and OpenReach are pitching peace of mind at a low cost.

Williams Hot Standby

- Customer pays full price for local-loop provisioning.
- Circuit is activated with a phone call.
- Monthly recurring cost is about 10% of an active circuit.

OpenReach Business Protection Program

- Designed for sites with a T-1 or less.
- Provides instant failover to a secure Internet connection.
- Pricing begins at $65 per site, per month plus the cost of the back-up connection.

If customers need to activate the back-up circuit, they can call to a toll-free number and Williams will turn up the circuit within minutes. While the circuit is active, customers will be billed 2% of the full monthly recurring fee for each hour of service.

Because the Williams Hot Standby network does not fail over immediately if the primary network goes down, it's not targeted at companies looking for redundancy for mission-critical applications, Kaste says. But it will give companies a back-up network they can turn on almost immediately.

Designing a network and provisioning a local loop can take weeks or months, Kaste notes, so if a primary network goes down and companies don't have a back-up network in place, they could be stuck without network service for a long time.

The service will be available nationally in major metropolitan markets.

It might seem odd that Williams, a company that filed for Chapter 11 bankruptcy protection earlier this year, is selling peace of mind to customers of other financially troubled carriers.

Williams, though, has a restructuring plan in place and says it hopes to emerge from bankruptcy this fall. The company recently lined up $150 million in funding from Leucadia National,

See Backup, page 19

Building the Optical Enterprise

Cisco COMET provides an optical answer to enterprise requirements for voice, IP convergence, storage and more.

AS ENTERPRISE NETWORKS INCREASE in importance to business operations, network architects must continually look for ways to meet new demands for bandwidth, resilience and performance. At the same time, enterprises are under pressure to contain costs even while they are being asked to improve service.

Explosive growth in e-commerce and Internet transactions is driving requirements for higher network bandwidths. For many, the most efficient way to meet this demand is to build a single high-performance network that can handle all their voice, data and video network requirements. Increasingly, customers will find this new network infrastructure is built on top of optical technology. Vendors such as Cisco Systems, with its Complete Optical Multi-service Edge and Transport (COMET) product portfolio, are delivering optical technology tailored to meet enterprise requirements.

Enterprise networks have grown to employ a mix of services. A typical network may have TDM private lines supporting voice with frame relay and ATM services handling data, at speeds ranging from T1/E1 to T3/E3 or even OC-3/STM-1 and above. On the LAN, Ethernet rules, with speeds consistently increasing from its original 10Mbps roots on copper wire, to 100M and gigabit speeds on both copper and fiber. Now 10Gbps Ethernet is even starting to emerge in both the LAN and metropolitan-area networks (MANs).

Today, most Ethernet LANs are used to transport IP traffic. Once used solely to carry data, with the dramatic increase in LAN speeds and accompanying improvements to the protocol itself, IP is now doing far more. Enterprises are finding they can build all-IP networks that support all of their voice, video and data network applications. Vendors like Cisco, with its Architecture for Voice, Video and Integrated Data (AVVID), are delivering network switches, routers and other components that make truly converged networks possible. AVVID guarantees not only the availability of large amounts of bandwidth, but the quality of service (QoS) characteristics required by delay-sensitive applications like voice and video.

Storage is another application that comes with stringent performance and bandwidth demands. Whether the enterprise chooses to deploy storage-area networks (SANs) or network-attached storage (NAS) devices, they need a reliable, high-speed network underneath. Business continuance applications that demand off-site storage require these networks be extended across the metro area, with bandwidth and reliability requirements that are nearly impossible to achieve with traditional wide-area transport services such as frame relay and private leased lines.

Converging on COMET

A confluence of factors is now making it possible for enterprises to support bandwidth-intensive applications such as storage consolidation and disaster recovery. First is the ability to lease dark fiber-optic cable and optic wavelengths from service providers. Increasingly, enterprises are finding that fiber or wavelengths are available to a number of their buildings in any given metro area, having been laid years ago by carriers in anticipation of future requirements. New fiber is likewise being installed at a steady pace, in both the WAN and the MAN.

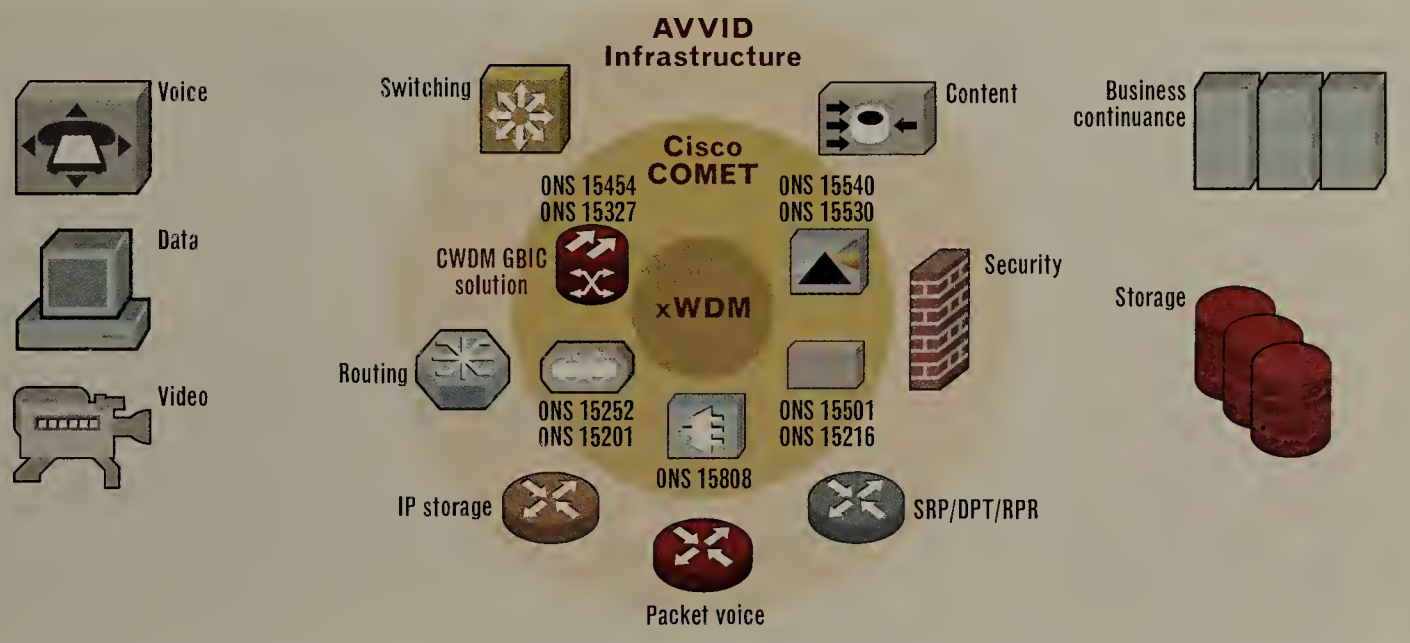
At the same time, carriers and enterprises alike now have the technology required to "light" that previously dark fiber and use it to support their myriad bandwidth and application requirements. Optical technologies like Wave Division Multiplexing (WDM) enable any service to be carried over wavelengths of light. WDM, integrated as part of a Multi-service Provisioning Platform (MSPP), can carry anything from Ethernet traffic to ATM, frame relay and private lines.

"Optical Fiber and DWDM technology enable enterprise customers to create a very high bandwidth optical infrastructure in the MAN today," says Carl Engineer, director of marketing at Cisco. "Multiple wavelengths can be used to aggregate all types of traffic, from lower-speed services on one wavelength of light and higher-bandwidth services such as ESCON, Fibre Channel and uncompressed digital video over other wavelengths."

Cisco gives enterprises the opportunity to take advantage of optical technology through its COMET product portfolio. COMET provides an array of optical networking equipment that enables enterprises to extend and manage across the MAN all the voice, data and video applications that Cisco AVVID technology has long supported in campus networks.

Cisco COMET: The Optical Foundation for Cisco AVVID

The Cisco COMET portfolio, anchored by the ONS switch family, enables enterprises to support any mix of voice, video, data, storage and disaster recovery applications.



COMET builds on the wealth of experience in routing and switching that is inherent in the Cisco IOS infrastructure and blends it with carrier-class optical technology. COMET provides for the provisioning of any enterprise network service or application over an optical network with no single point of failure. QoS capabilities are likewise supported end-to-end, as COMET equipment can interoperate fully with an enterprise's existing Cisco internetworking equipment and with carrier-provided services.

That's an important point, Engineer notes, because fiber deployment is an evolutionary process. "In any one city, the probability that you'll be able to tie 100% of your buildings together with fiber is fairly low, but there's a high probability that you'll be able to reach 40%," he says. That means enterprises will need a hybrid architecture for some time, one capable of mixing private optical services where fiber is available and carrier-provided services where it is not.

Over time, enterprises will be able to converge all of their voice, data, video and storage networks onto a single, highly resilient optical infrastructure, providing cost efficiencies in terms of operational expenses and recurring carrier charges while positioning the enterprise to meet future demands.

In short, the Cisco COMET portfolio enables enterprises to cost-effectively meet the demand for reliable, high-performance networks that support converged voice, data and video applications today while positioning them to meet whatever new requirements the future may bring.

Learn more about optical networking:

Download the white paper, "Cisco COMET: Optical Networking Solutions for the Enterprise," from: www.nwfusion.com/gocc/cometwp3.

Groove hooks up with cousin Notes

■ BY JOHN FONTANA

Groove Networks this week will be touting integration of its collaboration platform again with a major enterprise application — this time Lotus Notes, the brainchild of Groove founder Ray Ozzie.

The integration lets Lotus users instantly create a real-time collaborative workspace from within the Notes client and include users from inside and outside a company.

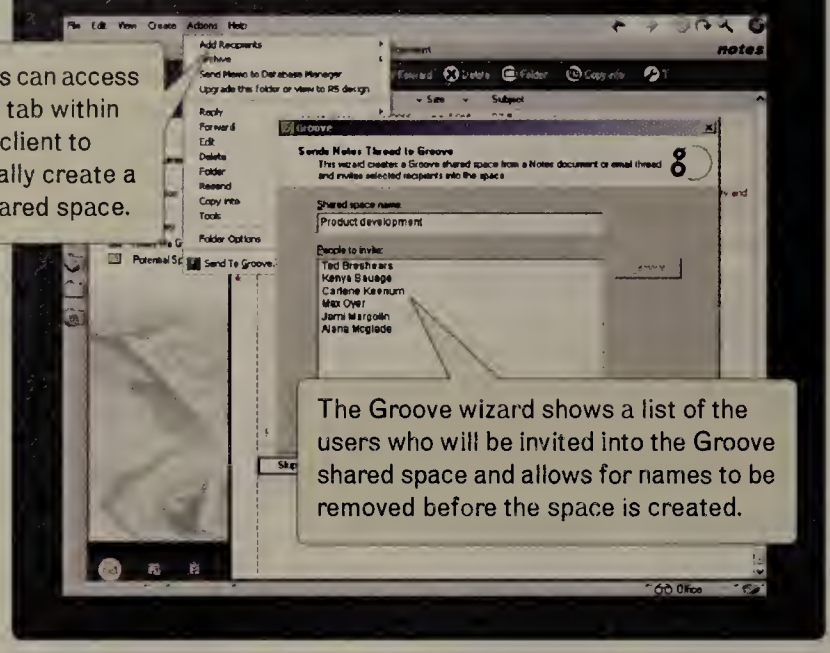
Network managers are finding Groove's focus at aligning itself with established corporate applications right on target with their desire to deploy collaboration tools that work within existing applications, which reduces deployment and training time.

Support for the Notes client is the highlight of Groove Workspace 2.1 and follows similar recent integration efforts with Microsoft Office and Outlook and Microsoft SharePoint Team Services. As part of 2.1, Groove will unveil a toolkit for Microsoft's Visual Studio.Net.

"We integrate Groove's very 'tactical' collaborative spaces with a traditional center-based repository for all the reasons you'd expect — the ability to index, reuse, archive [and] back up," says John Olson, a director for BAE Systems, which develops systems for defense contractors. "Integration with data repositories is almost always part of enterprise-level [projects] with Groove."

Groovy

Groove is integrating Lotus Notes in Version 2.1 of Groove Workspace, its collaboration software that is due out this week.



With Workspace 2.1, Olson says he can extend past the firewall some of his existing Notes messaging and workgroup applications. He is working on integration with Office so users can collaborate in real time on such tasks as reviewing and editing Word documents.

With Version 2.1, users can create a Groove shared space from within a Notes e-mail message, which is identical to the integration Groove did with Outlook.

But the Notes integration goes a step further in letting users select multiple e-mails and their attachments and move them all into a shared space and include discussion and file management tools. When the space is created, every user listed on the e-mail thread is sent an invitation to join the shared space.

Groove also has added support for Notes document links, which allows the insertion of hyperlinks to Notes content into any Groove tool that supports rich text such as discussions, notepad, project management or instant messaging.

"We know that no one starts from ground zero, so this integration is our recognition that people are using other products," says Donna Carvalho, senior product manager for Groove.

"We don't want to replace e-mail; we want to extend it. Groove is a platform. We've always said that," he adds.

The company also is adding enhancements to its document review tool and is unveiling a preview release of the Groove Toolkit for Microsoft Visual Studio.Net, which lets developers create and test Groove applications from within the Microsoft development tool.

In addition, Symbiant Group introduced a video-sharing application for Groove called MediaTeam 1.1 that lets multiple users view the same audio and video content while sharing a single set of controls for playback.

Groove 2.1 is available this week and is priced at $100 for the professional version and $50 for the standard version. ■

Mgmt. software maker Aprisma is set free

■ BY DENISE DUBIE

ROCHESTER, N.H. — Equipment maker Enterasys Networks last week announced that it has sold network management software company Aprisma Management Technologies to a buyout firm in a move intended to help Enterasys better focus and Aprisma position itself as hardware-agnostic.

Enterasys had planned to spin off Aprisma months ago, but that effort was delayed by a Securities and Exchange Commission (SEC) investigation into Enterasys accounting practices. Enterasys has been reeling since February, when it announced it was being investigated.

The company has laid off about one-third of its staff, and several top executives have resigned.

The sale of Aprisma to Gores Technology Group of Los Angeles "strengthens our focus on Enterasys' core business, the network needs of enterprise customers," CEO Bill O'Brien said in a statement.

As for Aprisma, the company says it will continue with its focus on service-level management. The SEC investigation will follow Aprisma into its independence. Zeus Kerravala, a vice president at The Yankee Group, says Aprisma will benefit from the sale.

"In some ways, I think the company has missed its opportunity because it remained under Enterasys for too long, and [Enterasys'] recent image problem is affecting all the former Cabletron companies," Kerravala says. "And the bright spot for Aprisma is that it's moving out of the shadow of Enterasys."

Aprisma CEO Mike Skubisz said in a statement that separating from Enterasys should better enable Aprisma to strike deals with other companies. Gores will provide Aprisma with the financial stability it needs to compete effectively, he said.

Gores will acquire all Aprisma's assets, customers, products and employees in the transaction, though Aprisma's headquarters will remain in Portsmouth, N.H.

Aprisma, like Enterasys, has been struggling. The company, known for its Spectrum management products, laid off 15% of its staff earlier this year.

Kim Kloskey, lead WAN data network engineer at Aurora Health Care in Milwaukee and a Spectrum software user, says she is optimistic about the purchase.

"It is a positive move and allows for hopefully additional development of the Spectrum software in strategic areas that we at Aurora are concerned about," Kloskey says. She says Aprisma informed customers in advance that it was looking for private investors to help it gain independence from Enterasys.

Aprisma and Enterasys initially were spun off from Cabletron when the company announced a major restructuring in February 2000, under which it divided into four parts. Global Network Technology Services and Riverstone Networks were the other two spinoffs. ■

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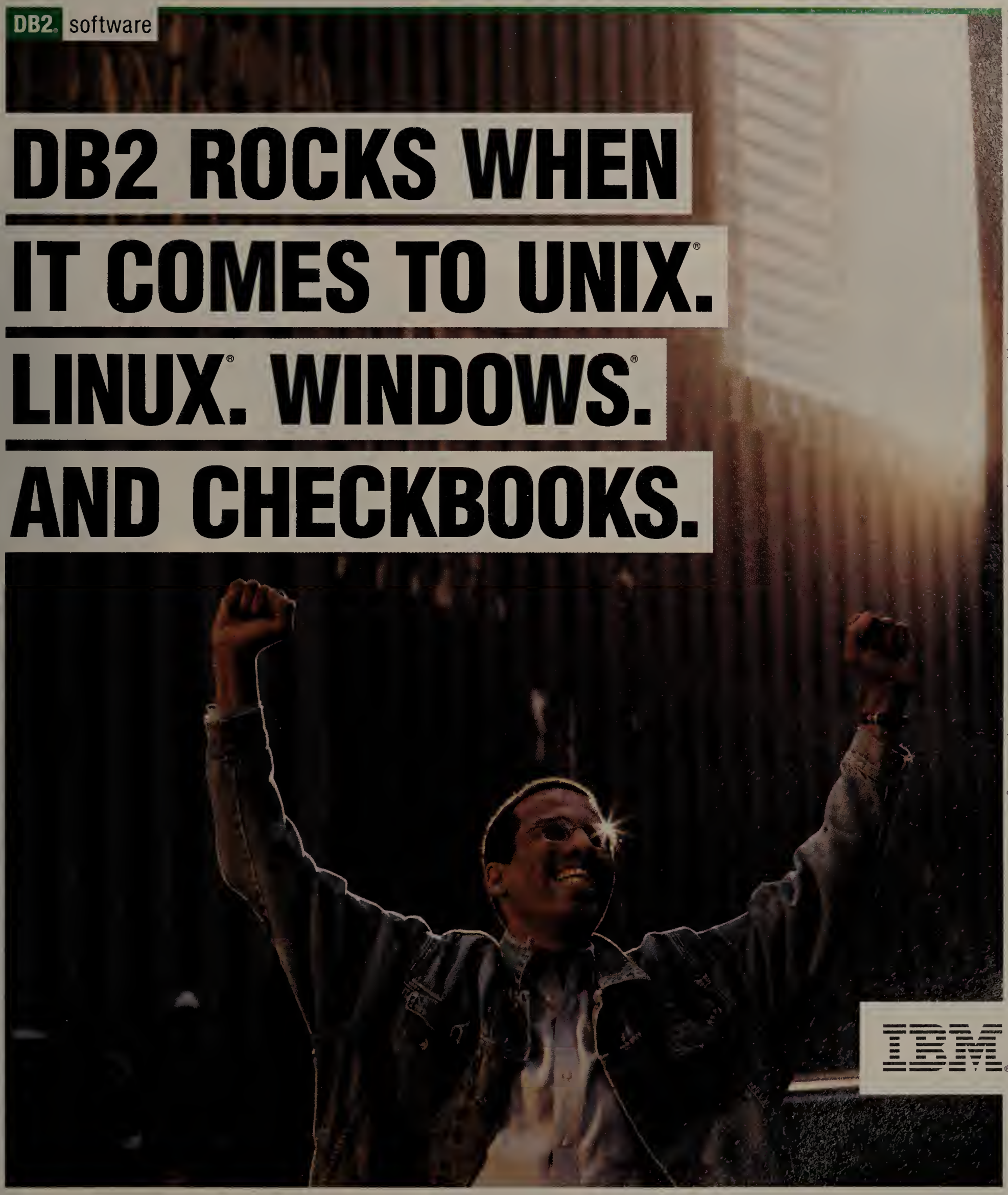

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Devices from Peribit now enforce priorities

Platform can compress IP voice traffic by 40%.

■ BY TIM GREENE AND STEPHEN LAWSON

SANTA CLARA — A platform that lets companies reduce the number of bits traveling across a private WAN connection, thus reducing bandwidth costs, now can maintain priorities customers set for different kinds of traffic.

Peribit Networks' SR-50 and upcoming SR-55 devices boil down e-mail, databases, Web pages and other traffic by recognizing repeated patterns and eliminating the redundant data. Depending on the type of traffic, the devices can reduce the size of files by a ratio of as great as 10 to 1, according to Don Templeton, vice president of customer engineering at Peribit. Companies that reduce the amount of data they send across a leased network connection can use a smaller, less-expensive link or put off upgrading service.

The devices sit between LAN switches and WAN routers with traffic passing through them via two 10/100M bit/sec Ethernet ports. They can process the traffic at up to 45M bit/sec.

The software that runs these devices can recognize about 50 applications and prioritize them by placing them in eight different traffic queues. Also, if traffic is marked elsewhere in the network using type-of-service or Differentiated Services priority tags, the Peribit gear will maintain those priorities.

This means information such as voice calls, which have to be delivered in real time, can be treated as required while being reduced in size. Previously, the Molecular Sequence Reduction software did not maintain such settings.

Peribit also has tweaked the way it compresses IP voice traffic so it can now reduce it by up to 40%, a boost from about 15% that it did before when it treated voice like any other packet.

Packeteer, FineGround Networks, Redline Networks and others tinker with traffic to improve performance over WAN links, says Michael Kennedy, president of Network Strategy Partners. Users generally install products from just one of these companies to limit network complexity, he says. "If I were setting up a network, Packeteer and Peribit would be competing for the same shelf space," he says.

Optical equipment maker Finisar uses Peribit gear to decrease the amount of traffic between manufacturing sites, eliminating the immediate need to buy more WAN bandwidth, says Patrick Wilson, the company's director of IT. He uses SR-50s to compress traffic before it is sent over the Internet via IP Security tunnels. He says traffic is reduced 50% to 75% and the Peribit gear is helping save enough on bandwidth costs to pay for itself in four months. The company started with two of the boxes, but now has four and plans to buy another, he says.

The new SR-55 device with Gigabit Ethernet ports will be available next month and costs $8,000 to $52,000, depending on throughput speeds that range from 256K to 45M bit/sec.

Lawson is a correspondent with IDG News Service's San Francisco bureau.

Let's get small

By quickly recognizing repetitive patterns in IP traffic and substituting them with sort symbols, Peribit Networks says it can compress traffic up to 80%.

Traffic	Reduction
E-mail	75%
SAP	73%
Oracle	78%
SQL	80%
Exchange	79%

Backup

continued from page 14

a diversified holding company, in return for Leucadia getting a 45% stake in Williams.

Like Hot Standby, OpenReach's Business Protection Program gives customers a back-up connection if their primary service goes down. But unlike Hot Standby, OpenReach's offering is targeted at sites using a T-1 or less as their primary link. OpenReach's service also lets customers use the back-up connection to complement their primary connections.

For its Business Protection Program, OpenReach requires customers to install an Internet connection that isn't tied to the customers' primary network link. OpenReach then installs VPN software on a non-dedicated PC on the customer premises.

OpenReach's software lets users balance traffic between the primary and back-up connections. So important applications could continue to run over a company's primary frame relay link, while less important data could be run through the back-up connection. The back-up connection could be anything from a dial-up 56K bit/sec connection to a business-class DSL services, says Mark Toumenoksa, OpenReach's founder.

OpenReach's service costs $65 per site per month. Customers also must pay for the back-up Internet link.

Williams: www.williamscommunication.com; OpenReach: www.openreach.com

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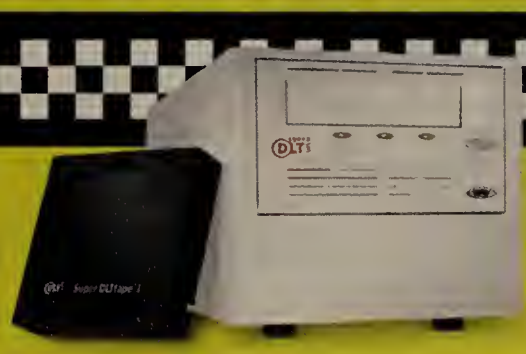

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Start-up targeting 10G Ethernet lands new CEO

■ BY DENI CONNOR

Dave Zabrowski brings experience as a high-level executive at HP to his new job as CEO of start-up S2io.

CUPERTINO, CALIF. — A start-up intends to challenge traditional I/O processing technology with 10G Ethernet products it hopes to introduce the first of next year.

S2io Technologies aims to boost the speed of the Ethernet and other interconnects such as InfiniBand that are emerging in enterprise data centers, says newly hired CEO Dave Zabrowski, a former vice president and general manager of Hewlett-Packard's Personal Computing Organization. Zabrowski's hiring was expected to be formally announced this week.

S2io will introduce network adapters that off-load the TCP stack from the system processor, thus increasing I/O performance. The company "is building a [single-chip] ASIC that will be incorporated in our products [that] provide for TCP offload," says a spokesman.

The company, which was founded a year ago and employs about 40 people, also has initial plans to manufacture gateway products that bridge InfiniBand or other technologies to 10G Ethernet, says Ed Roseberry, vice president of marketing at S2io.

Analysts say that while S2io's technology is impressive, it might be ahead of market demand.

"TCP offload for 10 G-bit Ethernet is definitely needed," says Jamie Gruener, senior analyst with The Yankee Group. "What happens though if 10 G-bit Ethernet or InfiniBand adoption doesn't occur as fast as they expect it to from a demand perspective?"

S2io says it hopes its products will be integrated into servers and storage products from top-tier vendors such as HP, Dell and IBM that require the faster processing capability TCP offload gives them.

Other vendors already are playing in this market. Adaptec, Intel and Alacritech have 1G-bit/sec iSCSI TCP offload adapters. Voltaire and Infinicon have Ethernet-to-InfiniBand routers and switches. Each vendor says it also is working on 10G technology.

Intel, too, earlier this year demonstrated a 10G bit/sec Ethernet network interface card and said it expected to ship the product in volume to server makers in the third quarter. ■

ISS software keeps an eye on applications

■ BY ELLEN MESSMER

ATLANTA — Internet Security Systems has begun shipping an upgraded version of its client-based intrusion-detection and firewall software designed to help companies better protect against harmful applications infiltrating desktop computers and the networks on which they run.

The software, dubbed RealSecure Desktop Protector 3.5, blocks unauthorized applications such as Trojans from invading a system.

The upgraded software is based on the BlackIce technology that ISS obtained a year ago through its acquisition of security software vendor Network Ice.

Companies can use the software, in conjunction with ISS' Windows NT-based IceCap Manager console, to remotely control applications on an end user's computer and automate security incident collection.

The University of Washington's medical division is migrating from the BlackIce to RealSecure.

"I can instruct it to run only certain applications," says Brian Donahue, a security engineer at the Seattle school. "If I set up a workstation as a kiosk, for instance, I can allow access to the Web but not other programs."

RealSecure Desktop Protector starts at $2,500 for a 25-user license that includes the IceCap console. ■

Newisys

continued from page 1

where he was CTO and vice president for the PC Division, and vice president of development for the RS/6000. He founded Newisys with Clay Cipione, a former vice president of development at AOL and director of workstation development at IBM. The company has landed $28 million in venture funding from Austin Ventures, New Enterprise Associates and AMD. Mike Maples Sr., former senior vice president of products at Microsoft, sits on the Newisys board of directors.

The Opteron processor has garnered a lot of interest because it runs 32- and 64-bit applications in native mode, unlike Intel's Itanium 2 processor, which runs 32-bit applications in a slower emulation mode. In that mode applications run only about half as fast as they would on a 32-bit server.

Users with enterprise resource planning or database applications will find the Opteron an attractive alternative to the Itanium, AMD says. Customers will be able to run 32- and 64-bit code without the performance degradation they would see in emulation mode.

John Humphries, senior research analyst at IDC, says Intel's answer to 64-bit processing power is the Itanium, which requires a forklift upgrade rather than a simple migration. "With AMD's Opteron, customers can move to 64-bit when they are ready and when they want to," he says.

> **"[Opteron] is faster for what I do now and it provides a future upgrade path when I'm ready for it."**
>
> **Rob Landley**
> Lead programmer, WebOfficeNow

One potential customer is convinced that servers using the Opteron processor will be successful.

"I'm interested in Opteron for the same reason 286 users were interested in the 386," says Rob Landley, a lead programmer at storage and IP communications company WebOfficeNow in Austin. "It's faster for what I do now and it provides a future upgrade path when I'm ready for it."

The Newisys server, codenamed Khepri, is the first in a series of servers with two to 64 processors the company will make. A 3U (5.25-inch-high) four-processor server, codenamed Sobek, is in the works. (Khepri and Sobek, like the 'isys' in Newisys, are derived from the names of ancient Egyptian gods and goddesses.)

Newisys says that its server also runs 32- and 64-bit applications faster than conventional servers because it uses a model that speeds interprocessor communications.

"The machine uses a flat, cache-coherent memory-symmetrical multiprocessing model," Hester says. "With 16G bytes of memory you can use the memory as a cache instead of having to go to the disk all the time. You'll see factors of three to four times the performance [of conventional servers] for Web serving alone."

The Newisys server has 512M to 16G bytes of memory and one or two hot-swappable 36G-byte drives. It is managed remotely from a browser and can be linked to systems management frameworks from Computer Associates, Tivoli Systems and Hewlett-Packard.

Advantage in size

The size of the Newisys offering — it is a 1U (1.75-inch-high) rack-mounted server — also is an advantage, observers say. In contrast, HP's smallest Itanium 2 server, the rx2600, is twice the height.

"You won't see any 1U Itaniums in the short term," says Jamie Gruener, senior analyst at The Yankee Group.

The Opteron processor has a smaller surface space and CPU packaging, lower power consumption and heat dissipation, and a simpler design than the Itanium, Newisys says.

An Intel spokesman says the Itanium is not meant to be built into 1U servers suitable to Web serving applications, but for the second and third tiers of the Internet infrastructure.

The biggest hurdle to adoption of the Opteron might be the lack of a major vendors such as Dell, HP or IBM deploying it for their servers.

PROFILE: NEWISYS

Location:	Austin, Texas
Product:	Newisys server, codenamed Khepri.
Description:	A slim rack-mount server that uses the 32/64-bit AMD Opteron processor.
Ship date:	Beginning of 2003
Funding:	$28 million
Venture backing:	Austin Ventures, New Enterprise Associates, AMD
Fun fact:	Company and product names derived from gods and goddesses of ancient Egypt.

"One of Newisys' biggest challenges is to get a Tier-1 manufacturer to sign on to distribute its servers," Humphries says. Newisys is pinning its plans on distributing its servers only through these vendors.

Provider to Tier-1 OEMs

"Our strategy is to be a technology provider to the Tier-1 OEMs and the systems builders that service the white-box channel," Hester says. "Very clearly our goal is to provide technology to companies like IBM, Dell, HP, Fujitsu and Hitachi."

The company says it doesn't expect to sign any OEM deals until year-end, closer to the time the Opteron will be available.

Analysts are warming up to the success of AMD servers, especially because IBM and RedHat recently said they would support the platform.

"A major vendor has to test the water," Gruener says. "That will be the litmus test to see if there is enough customer interest. There's enough acrimony out there about price that if a vendor could come out with a server that was cheaper [than a 32-bit Intel box] and performed as well, users would take an interest in it."

According to Newisys, the server, which runs Windows NT/2000 and Linux, could sell for about $2,500. A similar Dell server sells for $2,750.

Newisys: www.newisys.com

Get more information online.
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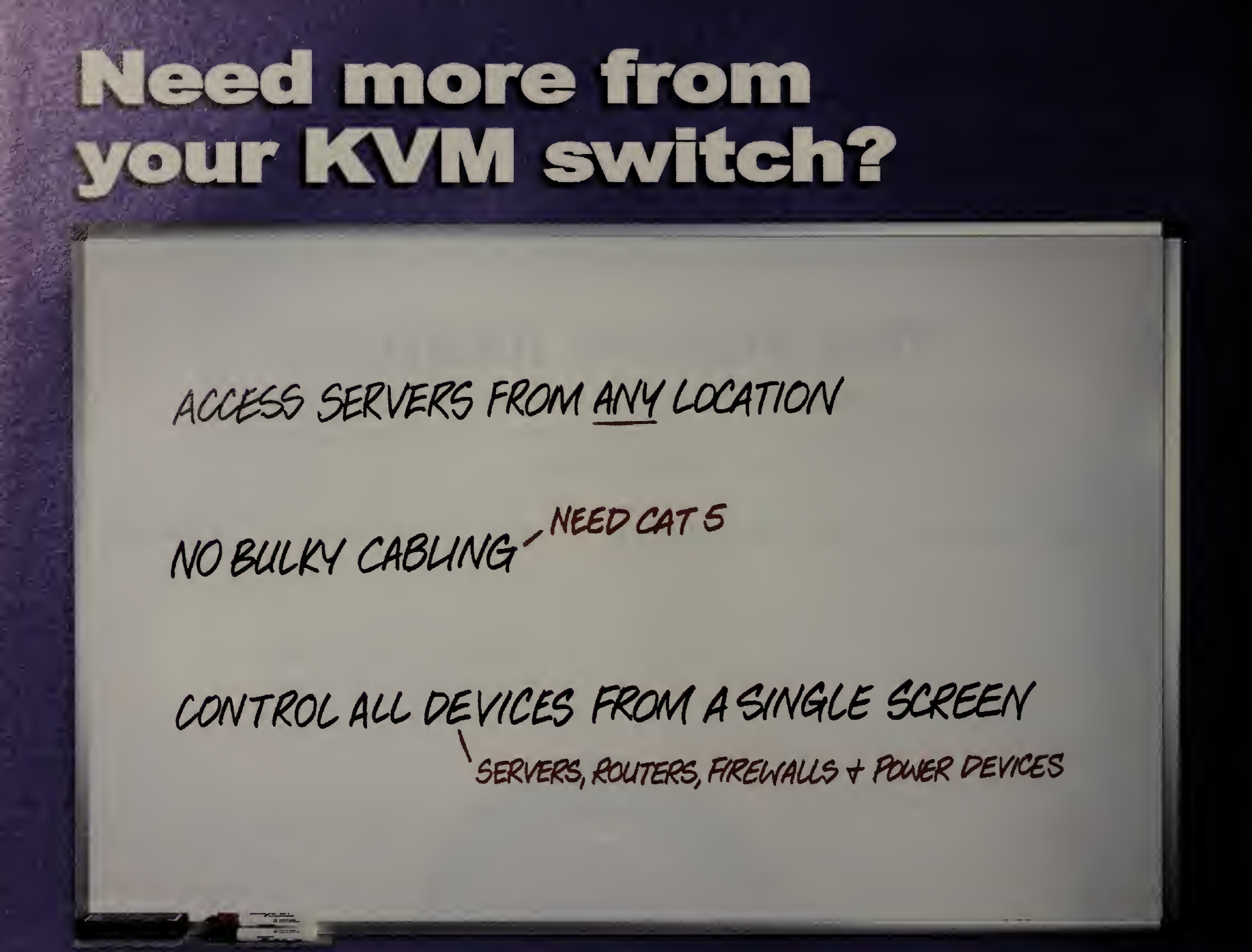

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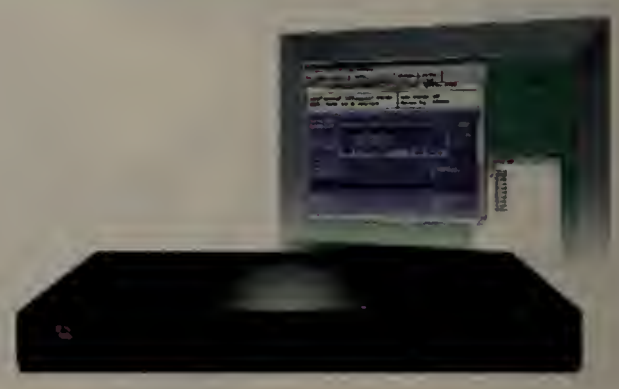

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Infrastructure

■ TCP/IP, LAN/WAN SWITCHES
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■ VPNS ■ NETWORKED STORAGE

HP-Compaq chip away at to-do list

Integration, co-development efforts under way as merged company sets up shop.

■ BY DENI CONNOR

Hewlett-Packard says that while most of its efforts have been in wrapping up the administrative details of the $19 billion acquisition of Compaq, progress is being made toward integrating products and co-developing technologies.

So far the company has merged 229,000 mailboxes, networked 1,193 sites and claims it will save as much as $800 million by combining its procurement and supply chains. Company officials say as many as 7,000 applications will be killed and as many as 15,000 employees laid off. Aside from these details, however, how much product integration is going on, and what can users look forward to?

Analysts say that while there are some initial signs of product integration, there ultimately will need to be more for the acquisition to be successful.

"They're still in the first three months of this thing, so in some ways the kind of moves HP has been doing are the ones you would expect, says Charles King, senior analyst with the Sageza Group. "They need to walk a tightrope between continuing to support their own and Compaq's products at the same time as they are planning changes for the future."

King says two prominent examples show the companies are moving forward.

"The [storage management] API swap with EMC is a good example of the sort of thing we will probably see more of," King says. "Another is the merger of the companies' directions on Itanium."

On the day the acquisition became final — May 7 — the company released road maps for all its products, detailing which products they would keep and which they would cancel.

Part of those road maps pertained to servers. According to the road maps, HP will discontinue its Netserver products next month in favor of ProLiant servers; it will port its PA-RISC, Alpha and MIPS servers to Intel's 64-bit Itanium processor over time. The company will keep both high-end Tandem and Superdome servers.

Serve it up

"I would expect [at the] end of October-November rolling out to the end of HP's fiscal year to begin to see the first servers re-engineered by the dual staffs," says Peter Kastner, chief research officer for Aberdeen Group.

One example might be the two eight-way ProLiant servers HP plans to announce in the first half of next year. These servers will use the HP F8 chipset and the Intel Xeon MP processor and be available in 4U (7-inch) high and 7U (12.25-inch) high chassis'. According to HP, they will be faster than other eight-processor Intel boxes. They have hot-plug RAID and an in-chassis upgrade option available.

According to Karl Walker, CTO for Industry Standard Servers at HP, the company will use InfiniBand router products to cluster servers. It will pursue PCI Express in workstations first and servers later. PCI Express, an I/O technology that is faster than PCI but backward-compatible, can be used to speed intraprocessor chip-to-chip transfers of data or as adapters that can fit in a server and bridge to InfiniBand, Gigabit Ethernet or iSCSI.

HP also will expand its Industry Standard blade offerings with two- and four-processor blades based on full-powered Pentium III and Xeon DP processors this fall and the beginning of next year.

HP's Itanium teams also are working together on the company's two- to 64-processor servers. They introduced two servers based on the Itanium chipset last month.

Meanwhile, HP has worked slowly on merging its storage hardware and software.

A place to put stuff

The company road map calls for continuing Compaq's midrange StorageWorks products and keeping its high-end XP series arrays, and for merging storage software under the OpenView name. It also calls for building products that fit in its Utility Data Center scheme, which lets data centers be provisioned and reconfigured on-the-fly.

"So far the product road map I've seen is sensible — in fact, it is downright smart," says Steve Duplessie, senior analyst for the

See HP-Compaq, page 24

What's next?

The newly merged HP and Compaq face numerous challenges. Here are some of them:

Challenges

- Grow market share in servers and storage.
- Become No. 2 in network switches.
- Minimize customer disruption.
- Integrate two companies.
- Capture market share in services.

Strategies

- Enhance price and functionality, move to a services/solution/software sell.
- Build out enterprise-level switches.
- Migration paths for products affected such as HP Netservers, MPE and Tru64 Unix.
- Integration teams mapping out course; employees advised on time.

Karl Walker, HP's CTO for Industry Standard Servers, says the company is on track for incorporating technologies such as iSCSI, InfiniBand and Serial ATA into its products.

Short Takes

■ **Adaptec** last week launched two **UltraSCSI RAID adapters** for entry and midsize server environments. The Adaptec 2120S and 2200S RAID adapters are single- and dual-channel cards with 64M bytes of embedded cache memory and optional battery backup, which provides up to 72 hours of operation. The adapters are managed from a browser-based graphical user interface. Each adapter allows hot-swappable disk drive support and RAID levels 0, 1, 10, 5, 50 and Just a Bunch of Disks. The single-channel 2120S is $525; the dual-channel 2200S is $800. Both will be available next month. www.adaptec.com

■ **The Storage Networking Industry Association** launched the **Storage Management Initiative** last week, which will help vendors build an interoperable, management interface for Fibre Channel, network-attached and direct-attached storage. SMI is based on the Bluefin specification, which has been renamed the **Storage Management Interface Specification.** SMIS used the Common Information Model/Web-based Enterprise Management specification, which provides a standard interface for the discovery, monitoring and management of storage resources. SNIA will seek standardization for SMIS and hold a variety of interoperability and testing events. www.snia.org

Device squeezes Web content onto IP phones

■ BY PHIL HOCHMUTH

SAN JOSE — Net6 last week released a network appliance that could help businesses elevate IP handsets from fancy desktop phones into more intelligent thin-client-style information appliances.

The Telephony Transformation Gateway (TTG) from Net6 can be used to convert Web content or applications such as Microsoft Outlook or SAP into a format and interface that is usable on the LCD screen of an IP telephone. The TTG acts as an interpreter between HTTP- or XML-based server applications and the IP phone. The box can strip items such as Web page banners, or reformat an application's interface so it is viewable and usable on IP phone LCDs — which are often the size of a PDA screen, or smaller.

A tool called a Design Studio is used to reformat Web pages so they can be seen on the phone. The TTG also comes with a preconfigured software module that allows Microsoft Outlook access from an

See Net6, page 24

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HP-Compaq,

Continued from page 23

Enterprise Storage Group consultancy.

This month HP amended an agreement that Compaq and EMC had signed in November to exchange management APIs so they could manage each other's storage arrays. They added HP's high-end XP arrays and its Virtual Arrays and a bunch of software to the list of products that will benefit from the exchange.

With the new agreement EMC also will use HP management APIs in its PowerPath, Widesky middleware and Remote Support Concentrator. HP will use EMC APIs in its OpenView Storage Area Manager, Utility Data Center Utility Controller and SureStore SAN Master products, among other products.

"The major benefit [of the API swap] is a single management domain," says Mattias Ress, senior IT storage architect for T-Systems AG, a subsidiary of Deutsche Telecom in Bonn, Germany.

Michelle Weiss, worldwide head of marketing for HP storage products, says that virtualization — the grouping of storage into a common pool — is another area where users will first see co-developed products. Analysts say the first products in this space will appear in the next 18 to 24 months as virtualization is incorporated into HP's Enterprise Virtual Array.

"One key to virtualizing the storage management is that I can change storage vendors without changing my storage management environment," Ress says.

Sources also say the company is expected to make announcements this fall regarding iSCSI, most likely as products that use it as a gateway technology to Fibre Channel arrays.

HP's Walker says PCI Express is in the company's plans — first as a higher-speed bus in workstations and later in servers. So is incorporating Serial ATA (SATA) drives for low-cost bulk storage and Serial-Attached SCSI (SAS) for performance and reliability in mission-critical applications. SATA drives will appear first in workstations and desktop PCs, later in servers as direct-attached storage (DAS). SAS only will be used as DAS in mainstream servers.

"They need to walk a tightrope between continuing to support their own and Compaq's products at the same time as they are planning changes for the future."

Charles King
Senior analyst, Sageza Group

Switch fanatics

As for switches, HP was the only vendor of the two companies that made Ethernet switches. Switch manufacturing will continue at a new level. According to Brice Clark, director of strategy for the HP ProCurve Networking Business, the unit says it will take over the No. 2 position in the market in 2003.

Analysts say that goal is ambitious.

"The last 12-months' revenues are $1.4 billion for 3Com and under half-a-billion for HP ProCurve," says Bob Sutherland, an analyst with Technology Business Research. "Even though HP has a long way to go, I don't see them surpassing 3Com unless 3Com is really hurt."

After all, Sutherland says the Compaq side of the house has practically assured that ProCurve won't take the No. 2 post. The company has 1,000 certified Cisco engineers and 4,500 experienced Cisco engineers. "That doesn't look good if they are trying to sell ProCurve," he says.

Cisco is the leader in network switching, followed by Nortel, Enterasys Networks, 3Com and Extreme Networks, Dell'Oro Group says.

Figures released by Dell'Oro show that HP moved into third place in the Layer 2 10/100M Ethernet switch market for the second quarter of 2001.

The company's 10/100M bit/sec switches account for about 60% of the overall Ethernet market in terms of revenue.

Clark says the company will introduce more switches for enterprise-size businesses in the next 18 months.

OS-sification?

On the operating system front, HP introduced a version of HP-UX 11i in June; Compaq launched a new release of OpenVMS. They will migrate MPE-ix and Tru64 Unix users to HP-UX and retain the NonStop and OpenVMS operating systems.

Users hope this merging of teams works out, especially as it relates to moving OpenVMS to Itanium platform.

"OpenVMS has amazing clustering, is highly reliable, very secure and has the Apache Web server and every compiler users could ever want," says John Eisenschmidt, a systems analyst for the American Association for the Advancement of Science in Washington. "If the migration of OpenVMS to Itanium is done correctly it will work out well."

The companies are sticking to their road maps, which say that HP-UX over time will take on clustering and file system enhancements of Tru64 Unix. HP claims that work has begun.

"There are a number of areas already where we are integrating the teams," says Rich Marcello, vice president and general manager of HP's AlphaServer division.

"For example, we are taking our TruCluster team, which was working on Tru64 Unix previously, and integrating that with the HP-UX team. We are developing TruCluster technology on HP-UX," Marcello adds.

Linux is another area where integration needs to take place. According to Martin Fink, general manager of the HP Linux Systems Division, little has been done to integrate HP's and Compaq's Linux teams because they have parallel goals — to create products on the low-end that run on Red Hat and SuSE Linux. Only in the technical computing arena will Linux on Alpha servers survive.

Fink says that before year-end, users should expect HP to announce a Linux version of fault-tolerant, clustering software, MC/ServiceGuard for ProLiant servers. ■

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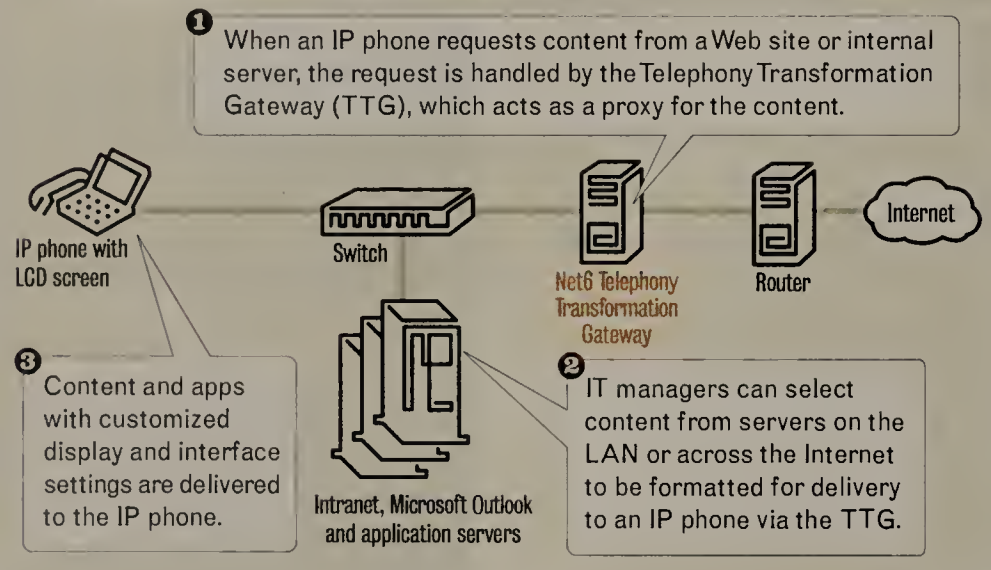
Phone browsing

Net6's appliance could help customers get more out of IP telephony.



Net6

continued from page 23

IP phone screen.

"The TTG [could] allow enterprise IT managers to gain more value from their investment in IP phones," says Mark Bieberich senior analyst at The Yankee Group. "It also allows them to contribute to the efficiency and productivity of their IP phone users."

The company plans to work with other software vendors, such as SAP, PeopleSoft and Oracle, for other application conversion modules.

The core technology behind the TTG and Net6's previously released Content Mobility Engine has been resold by Cisco for the past year as its Content Transformation Engine (CTE) 1400. The CTE 1400 is an appliance that converts Web content and applications to work with handheld devices and cell phones, with Cisco IP phone support recently added to the box.

Like Cisco's CTE 1400, Net6's Content Mobility Engine can be used to deliver content to mobile devices. The CTE 1400 is used to deploy content to small devices and IP phones at businesses and organizations such as Dow Chemical, Sheraton Hotels, Stanford University Law School and Johns Hopkins University.

Net6 also is planning to sell the box to service providers that sell IP telephony services or "IP Centrex" style of services to business customers. Net6 has partnered with softswitch maker Vocal Data, which sells IP-based phone switches to carriers. The Yankee Group's Bieberich says this also could speed carrier rollouts of IP voice services and add advanced features to such services.

"By transforming the IP phone into an endstation for customized content," Bieberich says, "the TTG could enable service providers to take advantage of IP telephony, and increase the number of profitable features sold in conjunction with IP [Centrex] services."

The TTG is certified to work with IP Phones from Polycom. Net6 says its device can work with any IP phone with an LCD screen, and software tools are included on the box to configure the TTG with phones from other vendors.

Net6 says it is working with other IP phone vendors and expects to release patches for allowing the TTG to integrate with 90% of the IP phones on the market, according to the company.

The TTG is available now for $8,000.

Net6: www.net6.com

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TOLLY ON TECHNOLOGY

Brian Tolly

Convergence: Is your IP network ready?

Is your IP network ready to converge with voice? Convergence. We all hear about it. Some of us even talk about doing it. But before embracing this hot concept, there are some serious considerations that need to be addressed.

You need to ask yourself questions like:

- What are my mission-critical applications?
- What are my latency-sensitive applications?
- How many prioritized traffic streams will I need?

When you answer these questions, you will be in a better position to test-drive a converged network.

I have heard people say that their switches support quality of service (QoS), so they feel their network is ready to support data and voice simultaneously. If it only were that easy. QoS is an albatross. You first must address questions such as:

- How does the switch manage its queues?
- What is the depth of those queues?
- What is the queue tax?

The Tolly Group recently performed just such a convergence evaluation to show that not all vendors are created equal when it comes to handling application flows with QoS. Moreover, we attempted to show that a best-of-breed environment is an acceptable alternative to a sole source converged network.

The Tolly Group and our test sponsor learned that with some vendor's QoS implementations, convergence is a matter of repetitious trial and error rather than an exact science.

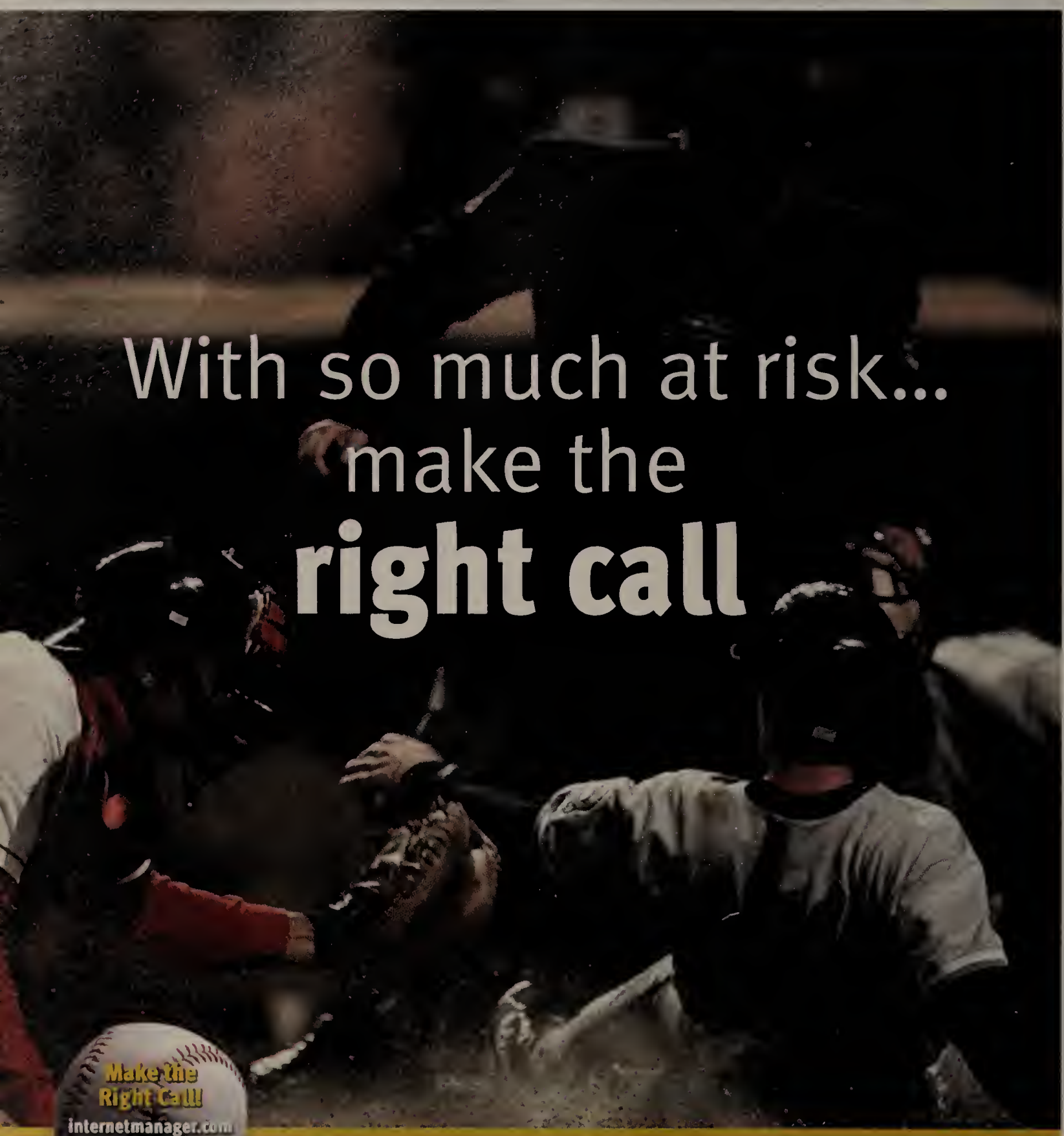
We answered all the questions I posed above. We knew that building an environment that closely modeled a real-world scenario would be no easy task, but we also knew that building an exact replica of the traffic found would prove more beneficial than a traffic profile of wire-speed 64-byte packets.

We identified our mission-critical applications such as database transactions. We noted our latency-sensitive apps such as voice over IP, video on demand and multicast. We also wanted to make sure tasks such as checking corporate e-mail and moving code updates around via FTP took priority over traffic like Web browsing. We also did not want to forget the highest priority traffic — management — in the form of Open Shortest Path First updates and the like. We calculated we needed six priority queues.

Then it was time to test-drive the converged network infrastructure. It is here that one finds out how many of the queues the vendor supports and of those queues, how many they are processing in hardware vs. software. Hardware-based processes tend to be more efficient at processing and thus have overall better performance characteristics than software-based processes. And of course my favorite finding of all — the cost of enabling QoS. It still disturbs me that some vendor equipment takes performance hits when advanced features like QoS are enabled.

Test-drive your IP network for convergence readiness before any massive deployment. Make sure your switches are up to the task of servicing all your application flows and allocate them the bandwidth they need, when they need it.

Tolly is a senior engineer with the Tolly Group. When he's not diving into QoS queues, he can be reached at btolly@tolly.com. Kevin Tolly is on vacation.



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Enterprise Applications

■ PORTALS ■ MESSAGING/GROUPWARE
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Instant messaging gains corporate respect

■ BY JOHN FONTANA

In the corporate fight to stem the invasion of consumer instant messaging, network executives are finding ways to turn what has been a negative into a productive enterprise tool.

What is developing in many large companies is a hybrid approach to deploying instant messaging for use over corporate firewalls. In essence, network executives are taking advantage of the cost-free consumer instant-messaging infrastructure, which they never have to service or upgrade, and adding a set of their own administrative tools they manage centrally.

Therefore, many are giving up the fight to block consumer instant-messaging services and are instead deploying software that provides tools for logging, auditing, archiving, policy enforcement, usage tracking and user identification for consumer clients such as AOL, ICQ, MSN and Yahoo.

"You either block all this stuff, force users on to one client that you control or find something that gives you a level of comfort in allowing these services in the company," says Stephen Webster, IS director of infrastructure, engineering and product operations for Calpine, an independent power producer in San Jose. "The latter is the tack we took because the other two are a real hassle. We don't have the manpower to shut down all these IM services or deploy a single client we have to maintain."

Webster, like most network executives, sees consumer instant-messaging products invading his network. He says the company's energy traders can't compete without the application.

IDC reports that 35% of users of consumer instant-messaging services are business customers and that 70% of companies have workers using instant-messaging for business-related activities.

"We thought businesses would buy corporate IM products to replace consumer instant messaging for client-facing lines of business, but that hasn't happened because of problems with interoperability and robust business clients," says Robert Mahowald, an analyst with IDC. "What's developed is a hybrid market. It's plopping these gateways down so business workers can use these consumer IM clients."

Mahowald says these gateways or "IM utilities" are slick enablers as opposed to enterprise instant-message software such as Lotus Sametime or Microsoft Exchange or hosted services. "The size of the consumer IM space and the lack of IM standards has businesses saying if we can't form a coherent IM strategy than this is the way to go," Mahowald says.

One drawback, however, is that corporations that use consumer instant-messaging networks for business have no control over availability and reliability, which has not been a problem. But Calpine's Webster says he doesn't want to invest in an instant-messaging infrastructure because there are no standards to tie different platforms together. It's the same issue e-mail faced nearly a decade ago when companies required bulky gateways to exchange messages between disparate e-mail programs.

"When there are standards, I will think about bringing IM in-house," Webster says.

Instead of fighting his users, Webster became proactive. He rolled out a software product called IM-Age for Desktops from IM-Age Software that installs on his desktops and gives him administrative control over instant-messaging clients from all the consumer providers.

He says the software installs via a logon script and runs in stealth mode so his users can't turn it off. He is able to add disclaimers, archive messages and flag keywords contained in instant messages.

IM-Age for Desktops, which was released two weeks ago, does all its work from the desktop, encrypting and decrypting messages before they go out on the network. It also can send instant messages to a database for logging and reporting.

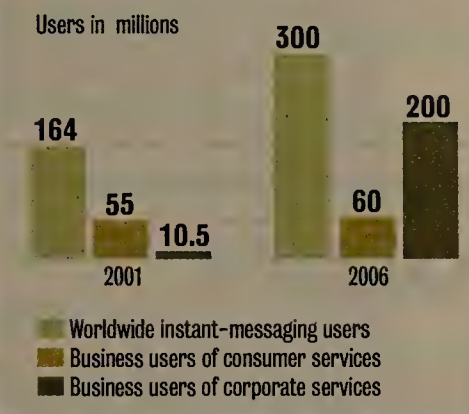
The company plans to add user administrative tools in a future release to link names in a company directory to instant-messaging nicknames. The software is priced at $4,000 for 100 seats and $3,000 for the database storage software.

IM-Age competes with companies such as IM-Logic, FaceTime Communications and Akonix, which provide proxies or gateways that sit behind a corporate firewall.

"It is no longer viable for IT to tell users to stop using consumer IM products," says Francis deSouza, CEO of IM-Logic. "You take this away from brokers and salespeople and they say they are at a disadvantage." ■

Growth of IM

A forthcoming report on instant messaging by IDC predicts the use of instant messaging will skyrocket in corporations between 2001 and 2006.



Short Takes

■ In a move to attract more enterprise customers, **VA Software** will release a version of its **SourceForge Enterprise Edition** software development platform optimized for IBM's DB2 database. IBM will sell VA's enterprise product, which also will be optimized to run on IBM xSeries servers running Linux, VA says. SourceForge Enterprise Edition for DB2 is due out by year-end. Pricing was not available.

■ After 30 years of running closed, proprietary systems as the pre-eminent provider of data to the travel industry, **Galileo International** said last week it has gone live with its **first external Web service.** The company says **AAA,** North America's largest motoring and leisure travel organization and Galileo's largest customer, is now using a Galileo itinerary Web service to provide flight and fare information to users of its Web site.

IBM targets B2B systems integration software

■ BY ANN BEDNARZ

IBM has announced its forthcoming business-to-business application-integration software, which is aimed at helping companies connect their internal applications to their business partners' systems.

Called WebSphere Business Connection, the new software provides a flexible, Internet-based alternative to proprietary electronic data interchange systems, says Scott Cosby, manager of WebSphere business process integration at IBM. At its most basic, Business Connection is a Web services gateway for sending and receiving documents using XML and Simple Object Access Protocol (SOAP). It was developed in response to customer requests for an easier, more affordable way to collaborate electronically with trading partners, Cosby says.

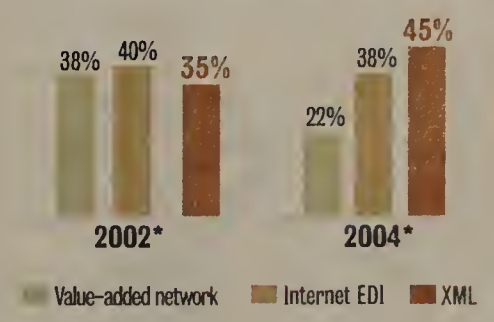
IBM has an established line of enterprise application integration (EAI) products, built around its MQ message broker. But whereas IBM's existing EAI software, WebSphere Business Integration, is focused on linking internal applications and systems. Business Connection is about linking to systems outside the firewall, he says.

"Business Connection is what enables you to get across the firewall and deal with your partners in the seamless way that you'd want to deal internally — handling

See IBM, page 28

B2B standards

Use of XML standards in business-to-business transactions is on the rise.



'NET INSIDER
Scott Bradner

Good guys wearing black hats

How frustrating! Just after I had sent last week's rant against Hewlett-Packard's stupid initial reaction to being told about a security problem with its operating system to my editor (www.nwfusion.com, DocFinder: 1829), I left for a few days of relaxation in California. The next morning I read that the U.S. cybersecurity czar was encouraging hackers to ferret out security vulnerabilities in commercial software. That sure would have been a good tagline for the column, but it was just a few days too late. So I'll write about it now.

Richard Clarke, President Bush's special adviser on cyberspace security, gave a keynote speech to the Black Hat security conference in Las Vegas, sponsored by nine companies including Pricewaterhouse Coopers, Nortel and Microsoft. He blasted companies, particularly those selling wireless network equipment and ISPs offering broadband Internet access, for not providing meaningful security.

Not coincidentally, the same day that the Black Hat conference story broke, the U.S. Department of Defense announced it is going to prohibit the use of most wireless devices inside military buildings in the near future. This will include cell phones, wireless handhelds and wireless laptops. All because, to the closest approximation, there is no security on these devices. Gee, they are getting picky!

Clarke also said at the Black Hat event, "Some of us, here in this room, have an obligation to find the vulnerabilities [in commercial software]." He cautioned that software vendors should be told about any vulnerabilities that were discovered rather than the information just being made public. That way, the vendor would have the chance to put out a fix before the bug became widely known. He also recognized that some vendors seem less than interested in fixing security problems and told the hackers that they should report vulnerabilities to the government in that case.

Clarke suggested that laws might be needed to protect hackers that act in good faith. He did not mention it, but one thing that might be needed is a "clarification" of the Digital Millennium Copyright Act to prevent a company more interested in protecting weak software than fixing it from using the DMCA as a stick to poke people in the eye.

It is very good news that someone from this, or any government, understands that the best security happens when systems are tested. The alternative is to bet on the omniscience of programmers and the stupidity of the bad guys. This does not seem like a good bet when the economic health and security of this and other societies are the table stakes.

Now if there were only some real incentive for vendors to put out secure systems and to provide quick, well-tested and easy-to-install fixes when flaws are found. The cost of last year's Nimba virus was about $3 billion. Maybe if the vendor of the vulnerable software had to pay some of that cost it would make the vendor wake up.

Disclaimer: $3 billion would even make Harvard wake up, but the university did not offer the above opinion, I did.

Bradner is a consultant with Harvard University's University Information Systems. He can be reached at sob@sobco.com.

ATG updates portal, commerce products

■ BY JENNIFER MEARS

CAMBRIDGE, MASS. — Online CRM and portal software vendor Art Technology Group is embedding features such as analytics, search and content publishing into its portal and commerce products, eliminating the need for customers to integrate these capabilities themselves.

The company last week released ATG6, the latest version of its commerce and portal products. The updates in ATG6 come as new software modules that can integrate with each other and with the commerce and portal software. ATG's products are compliant with Java 2 Platform Enterprise Edition and run on top of the company's Dynamo application server, and application servers from companies such as IBM and BEA Systems.

ATG also is making it easier for customers to integrate its products with legacy systems.

The modules are:

- ATG Analytics. ATG is partnering with Hyperion to provide analytics capabilities, enabling customers to collect user information to identify trends and customer behavior patterns.
- ATG Search. ATG is partnering with Autonomy to embed advanced search technology into its commerce and portal products.
- ATG Publishing. ATG has boosted the capabilities of its content-management features by letting business users have more control over not just content, but also business rules that are used to manage promotions and catalog entries, for example.
- ATG Integrations, meanwhile, combines software and services to connect ATG products to enterprise applications. The first applications supported are Siebel and SAP, says Fumi Matsumoto, vice president of technology at ATG.

In the past, customers had to pick and choose products from a multitude of vendors to add features to the base ATG products, Matsumoto says. Because of the module design, however, companies are not locked into specific technologies so if they already have a search technology in place, for example, they don't have to use the search module.

Portal power

Research firm Basex says portals can cut the time workers spend looking for information from 10 hours to 6 hours per week.

Robert Buttacavoli, global director of eCommerce strategy & development for Mercer, a consulting company, already has search capabilities within his ATG Commerce suite deployment, but says he's looking forward to using the analytics and integration modules available with ATG6.

Mercer has used the ATG Commerce Suite since April to serve customers through its mercerHR.com human resource consulting site and mercerIC.com investment consulting site. ATG's personalization capabilities enable Mercer, which services thousands of clients around the globe, to get the right information to the right people in the right language.

Pricing for ATG6 was not released. ■

IBM

continued from page 27

security, handling partner management and handling transaction issues," Cosby says.

IBM is not the first vendor to offer business-to-business integration products — companies such as Ariba and Commerce One were conceived around the idea of connecting trading partner networks, says Tim Sloane, director of Internet infrastructure at Aberdeen Group. In addition, companies such as ADX and Global eXchange Services offer hosted services for creating ties to business partners' systems.

IBM's offering is different from the others because of its ties to IBM's WebSphere Application Server, he says. Instead of having separate tools for business-to-business collaboration, IBM has built its business-to-business toolkit around the established WebSphere development platform and runtime engine.

"This market used to be considered distinct and separate from application servers. It was about B2B, and it was sold to companies that were trying to figure out at a business level how to move to a B2B environment and do e-commerce," Sloane says. "This is a sign that the market — B2B connectivity — is really moving back into the corporate IT department and is going to be bundled into the app server and development environments that major vendors like IBM are bringing to market."

AMR Research analyst Kimberly Knickle says that since IBM acquired business-process management vendor CrossWorlds last fall, IBM has been reorganizing its product line to take a stronger leadership role in the integration market.

"As IBM strengthens its position on the B2B side, we expect B2B veterans such as GE Global eXchange Services and Sterling Commerce to take notice," Knickle wrote in a research brief last week. "For end users, it means more pressure on the vendors to provide simpler Internet-based options at lower prices."

Business Connection is intended to complement IBM's EAI tools and its Portal Server software — but these are not prerequisites, Cosby says. It can exchange documents with any application that supports XML and Web services standards, he says.

The new software comes in three versions tailored for varying degrees of integration complexity:

- Business Connection Express is a simple Web services gateway for exchanging XML-based information. Pricing starts at $5,000, which covers up to 10 partner connections. Express supports the exchange of SOAP messages over HTTP.
- Business Connection Standard starts at $28,000. Users can connect to up to 50 partners through its Web services gateway or build a single connection to one business partner via more traditional channels, such as over FTP, EDI or RosettaNet.
- Business Connection Enterprise builds on the Standard edition and adds transformation, or processing, capabilities. Instead of simply sending and receiving EDI messages, for example, the Enterprise edition can trigger a message in response, such as send a purchase-order acknowledgement. Its $87,000 starting price covers up to 100 Web services connections or a single connection to one business partner via FTP, EDI or RosettaNet.

WebSphere Business Connection runs on Windows 2000, Solaris and IBM AIX. It will be available next month.

"IBM did a good job of getting the entry [price] down so that companies can do pilots and see the benefits," Sloane says. Instead of estimating the benefits of business-to-business collaboration with trading partners, a company can try it out and measure actual gains, he says.

"This pricing allows companies to go out and pick one partner, implement it, and see what the benefits are, how it all works, how much the infrastructure costs and how much it takes to keep it all running." ■

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Special Focus

DISTRIBUTED APPLICATIONS: A look at peer-to-peer technology

P2P getting down to some serious work

■ BY JOHN FONTANA

Just a few years removed from the mayhem of music swapping that clogged corporate networks, peer-to-peer technology is growing up and rediscovering its roots as a legitimate concept for distributed computing in corporate environments and the Internet.

The turnaround is distinct since P2P has distanced itself from the darling days of Napster and has been transplanted onto the architectural drawing boards of Internet and corporate network gurus.

For network executives, the about-face is showing up in such discrete places as wireless routing, identity management, Web services and grid computing. P2P has proved its worth — albeit with a few warts — in enterprise collaboration and content management applications, but its brightest future may be in the plumbing of corporate distributed computing.

P2P in its purest form is two endpoints communicating without a server in the middle. But many P2P products use a hybrid approach that can incorporate a server.

But even as P2P fades into the background, questions around security, standards and quality of service still have to be answered before P2P can flourish, experts say.

The P2P evolution

Regardless, P2P's evolution has hit its next stage.

"Peer-to-peer is an architecture and one that will play a substantial role in distributed computing as endpoints in the network gain more power," says Jamie Lewis, CEO and research chair of Burton Group. He says that will be particularly important for Web services as peers share processes and data. "P2P will become a fundamental part of how distributed computing evolves across the Internet and how enterprises build distributed systems internally."

Lewis says the Internet today is very rudimentary with its basic protocols for basic operations. "Now we're seriously talking about the network becoming the computer, incorporating some P2P connections and being able to share processes and power, which is what grid computing provides."

Observers say it's a renaissance.

"P2P's reverting to an architecture that can be applied to solve problems that by their very nature are distributed," says Neil Macehiter, senior consultant for Ovum, a research and consulting firm. "But the question is can this model provide benefits for business use."

Macehiter says it can, but he cautions that security, such as removing blocks to P2P traffic on corporate firewalls, is still a major inhibitor to acceptance.

"But you can imagine something like grid extending to share application logic instead of just being a data grid or a storage grid. When you look at Web services sharing business logic in the enterprise, you see the intersection with grid and P2P," he says.

> **"P2P will become a fundamental part of how distributed computing evolves across the Internet and how enterprises build distributed systems internally."**
>
> **Jamie Lewis**
> Research chair, Burton Group

Working together

To underscore P2P's evolution, the Global Grid Forum (GGF), a 2-year-old group founded by academics and researches, merged in April with the P2P Working Group, originally founded by Intel. The groups are attempting to marry the GGF's work on harnessing servers on a grid with P2P's ability to connect desktops.

"We're now trying to figure out how grid and P2P play nice together, and capture that power for use in enterprise computing," says Andrew Chien, co-director of the GGF's peer-to-peer area and CTO of Entropia, a provider of desktop grid applications.

Late last month, the merged group began evaluating how P2P relates to the Open Grid Services Architecture, an effort to standardize grid computing. Chien says his group is exploring how P2P protocols for such things as registration, resource discovery and coordination of data transfer support a common grid infrastructure.

And P2P's roots are reaching into other areas. It is an integral part of mobile wireless technology set for release this fall by MeshNetworks. The company's MeshLAN software extends the range of 802.11 wireless networks by making every wireless peer an endpoint in an ad-hoc P2P network and also a router/repeater to channel traffic to other peers.

Using a patented multihopping technology, peers that are out of range of wireless access points or peers they wish to communicate with can hop through other peers to reach their destination, including corporate LANs. It not only increases the wireless range, it preserves throughput, which is up to 6 megabits. The technology also is mobile, letting hopping take place from nodes traveling in vehicles up to 250 mph.

"P2P allows us to do the hopping, and our algorithms allow the traffic to pick the most efficient path to travel," says Rick Rotondo, vice president of disruptive technologies for MeshNetworks. "The beauty of a P2P network is that it is self-forming and self-healing."

And the technology is mature. The Defense Advanced Research Projects Agency (DARPA), which created the Internet, spent $150 million developing the peer technology for use in forming instant networks among soldiers on a battlefield. MeshNetworks licensed it from DARPA has spent an additional $27 million to create a commercial product.

P2P also is key to the PingID Project to create an identity management system similar to work under way by Microsoft and the Liberty Alliance Project, which are not using P2P.

"Ideally, you need a way to create, manage and exchange digital identity information with no one in the middle of the transaction," says Andre Duran, founder of the project. He says that's P2P, but it's just one part of the equation.

"Your ID is a virtual private vault with different drawers," Duran says. "One drawer may be on your PC, one may be with a service provider, and you need a client to manage all that. We are building the infrastructure to support that."

Ping ID is working on server and client software that acts like a mini-Web server and maintains a repository of user's identity information. Users have the option of exchanging IDs directly through P2P or using client/server technology to authorize a third party to dispense their identity data.

"P2P provides a level of control that other architectures don't," Duran says. "It comes down to the fact that some applications are more efficient with P2P."

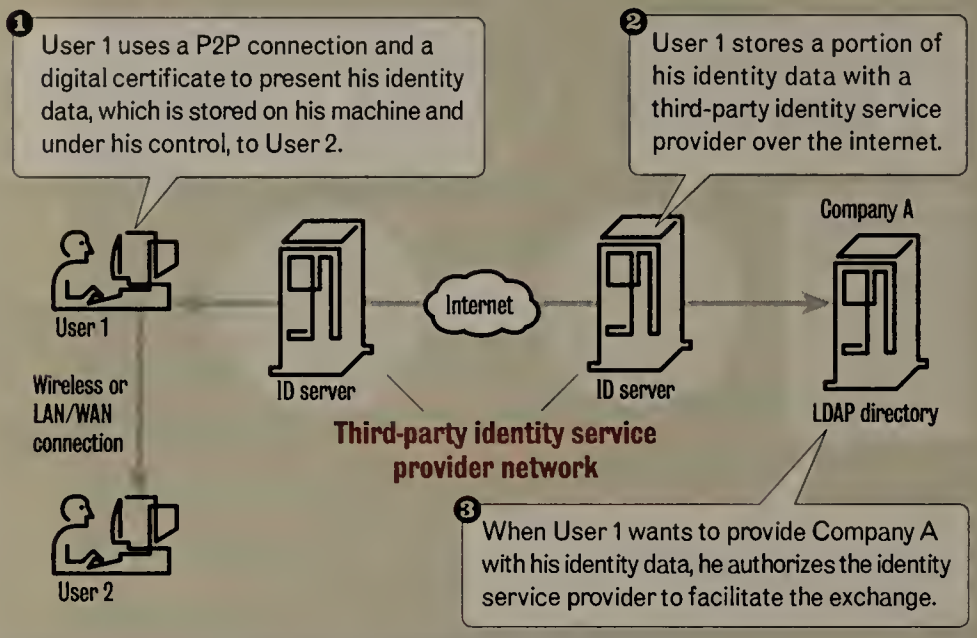
That is the concept that is driving P2P into so many different areas of computing.

"P2P has evolved from something highly disruptive to something complementary to intranets, extranets, mobile users and all the Web integration," says Greg Bolcer, CTO of Endeavors Technology, which develops a P2P collaboration software called Magi.

And although P2P is still settling into this new role, it's obvious that its reputation as a music-swapping corporate scourge are now well behind it. ■

Identity exchange

The PingID project is developing a standards-based identity management system that uses peer-to-peer and client/server technology as options for exchanging identity information.



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MTV gets 'edgier' with Akamai service

Dynamic sites use CDN to reduce demand on origin infrastructure, boost performance.

■ BY JENNIFER MEARS

Content delivery networks may have made their name by speeding the transport of static content from the edge of the Internet, but that's not enough anymore.

Today's Web sites are more sophisticated, and network managers are looking for ways to boost performance not just of static content, but also of dynamic, personalized content and applications.

That's what prompted MTV Networks, a division of Viacom in New York, to expand its relationship with Akamai. The entertainment company had used Akamai Technologies' FreeFlow service since the spring of 2000 to bring static content closer to end users. But as MTV's Web sites became increasingly dynamic and more requests traveled back to origin servers for personalized information, the ability to cache static content became less of an issue.

"We came to the realization that we were caching requests that were the least problematic for us to serve — or for anybody to serve — and paying a significant premium. That wasn't where the value was," says Nick Rockwell, MTV Networks' senior vice president of online technology. "The value was in serving the difficult [personalized] requests," such as telling logged-on users they had e-mail waiting.

About 14 months ago, MTV looked at an offering from Akamai called EdgeSuite, one of the first services to support dynamic content delivery when it was introduced in October 2000.

MTV implemented EdgeSuite across more than a dozen Web sites, including mtv.com, nick.com, vh1.com and tvland.com. An integral part of EdgeSuite — the piece that Rockwell says is providing the most benefit to MTV — is a markup language created by Akamai and other industry members called Edge Side Includes (ESI).

The HTML-based language, which has been proposed to the World Wide Web Consortium as an industry standard, defines fragments of Web pages, allowing them to be assembled and updated at the edge of the Internet. With ESI, companies can set rules within Web pages, alerting the cache when it is necessary to retrieve fresh information from an origin server and when cached content can be used. Then new content from origin servers can be combined with cached content so that an entire Web page can be assembled at the network's edge — no need to retrieve complete pages from origin infrastructure.

"As we targeted higher-value requests for caching, we needed some real sophisticated processing on the assembly at the edge to do it effectively," Rockwell says. "There are so many cases where individual bits of content or objects, depending on the circumstances, were or were not cacheable."

With ESI, caches can be told how to understand those circumstances. On the MTV Web sites every page has at least one small element that has the potential to be personalized, which means that no page can be fully cached in the traditional manner because the cache must first determine if personalization is necessary.

MTV worked with Akamai to code its sites and use ESI to set up the framework that would tell caches how and when to cache content, and when to go back to its ATG and Netscape servers at the origin.

Users who log on to an MTV site get a cookie. The ESI code within the site tells the cache to look for that cookie. If the user is not logged on and there is no cookie, it can deliver a cached copy of the page. If there is a cookie, it will tell the cache what fragments of the page need to be updated.

On the Nickelodeon Web site, nick.com, users can play games and rack up points. A toolbar shows logged-on users how many points they have. If a user is not logged on, the point tally isn't displayed, personalization isn't necessary, and the page can be delivered directly from the cache.

"That's an example of a small element on the page that renders the entire page uncacheable for any logged-on user because it's never going to be the same for any two users," Rockwell says.

Without ESI, the entire Web page would have to be created at the origin for a logged-on user. With ESI, the fragment of the page containing the toolbar would be updated, sent from the origin, and then inserted into a cached copy of the page and delivered from the edge.

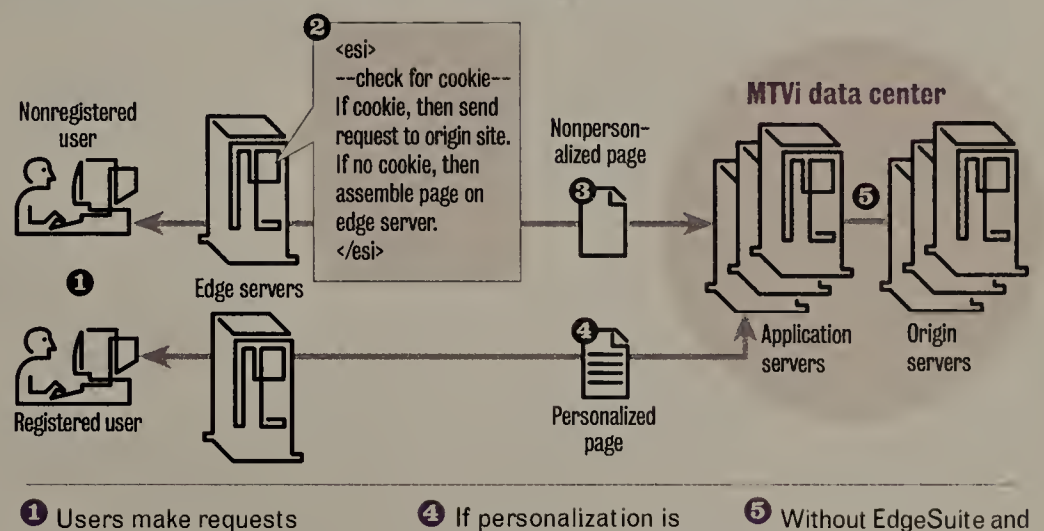
Rockwell wouldn't be specific about cost savings resulting from using EdgeSuite and ESI, but said infrastructure demands have been reduced significantly. More importantly, he says, performance is improving. Mtv.com experienced a 100% boost in performance in handling the big spikes in traffic that followed the MTV Movie Awards in June, compared with the same event last year.

As for drawbacks, Rockwell says using ESI has simplified certain parts of his infrastructure but complicated others. "Now we have to think about cacheability on a per-component basis," he says. "We have to get our metadata right or we'll have unintended consequences like stale content."

In addition, ESI is another markup language that his engineers must learn. Eventually, Rockwell says, he'd like to use Akamai as a more natural extension of his infrastructure by deploying servlets at the edge. Akamai is moving in that direction and has announced that it is developing support for Java 2 Platform Enterprise Edition and .Net processing at the edge. ■

Making use of Edge Side Includes

MTV Networks uses Akamai's EdgeSuite and the ESI markup language to support delivery of dynamic content from the edge of the Internet.



1. Users make requests to the Akamai cache.
2. The Akamai edge server checks for personalization cookies.
3. If no cookie, edge server sends nonpersonalized page.
4. If personalization is necessary, the request is sent to the application servers, fresh content is generated and sent to the edge servers where it is inserted into the page.
5. Without EdgeSuite and ESI all requests have to go back to the origin servers to determine whether personalization is necessary.

Short Takes

■ A pair of Asian firms — **Hutchison Whampoa and Singapore Technologies** — has purchased bankrupt telecom outfit **Global Crossing.** The companies will shell out $300 million in cash and $200 million in notes to Global Crossing's creditors. They also will invest another $250 million in Global Crossing. The creditors had rejected a more lucrative deal from the same two companies in January, hoping for a better deal.

■ The fast-rising number of computer users connecting to the Internet via DSL connections instead of dial-up telephone lines is leading to a drop in the number of telephone calls being made in **Japan.** In the period from April 2001 to March 2002, the total number of calls made dropped 17% as asymmetric DSL subscriptions soared from 71,000 to 2.4 million. Looking just at the local-call market, the drop is even more dramatic at 34%, according to Japan's Ministry of Public Management.

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EYE ON THE CARRIERS

Johna Till Johnson

Time for a bit of optimistic telecom news

This week marks a milestone for me: After 14 months of writing this column twice per month, the folks at *Network World* have asked me to take it weekly.

To mark the event, I'm going to take a break from the cumulative drumbeat of horrible news in the telecom sector. Yes, the news is still bad, but let's look instead at three developments I think will have a significant positive effect on how telecom services are delivered.

The first is grid computing. Basically, grid computing refers to linking arrays of low-end and midrange machines to take advantage of unused CPU cycles for processing-intensive tasks such as modeling and simulation. For commercial users, the big driver is cost savings. Instead of spending tens of millions of dollars on high-end supercomputers, users can achieve the same or superior results with off-the-shelf hardware (some enterprising companies are even building grid-computing arrays using obsolete PCs). Financial services firms are beginning to deploy grid-computing techniques for predictive financial modeling, and over the next 12 to 18 months you'll see more following suit.

The telecom impact is software and solutions developers are working on architectures that enable grid computing across the WAN. That will require a lot of quality of service because latency and jitter become critical, along with plain old bandwidth. But it's a great excuse for service providers to begin marketing "grid-optimized services."

The next big development is quality-of-experience (QoE)-enabled networks, spurred on by — get this — online gaming.

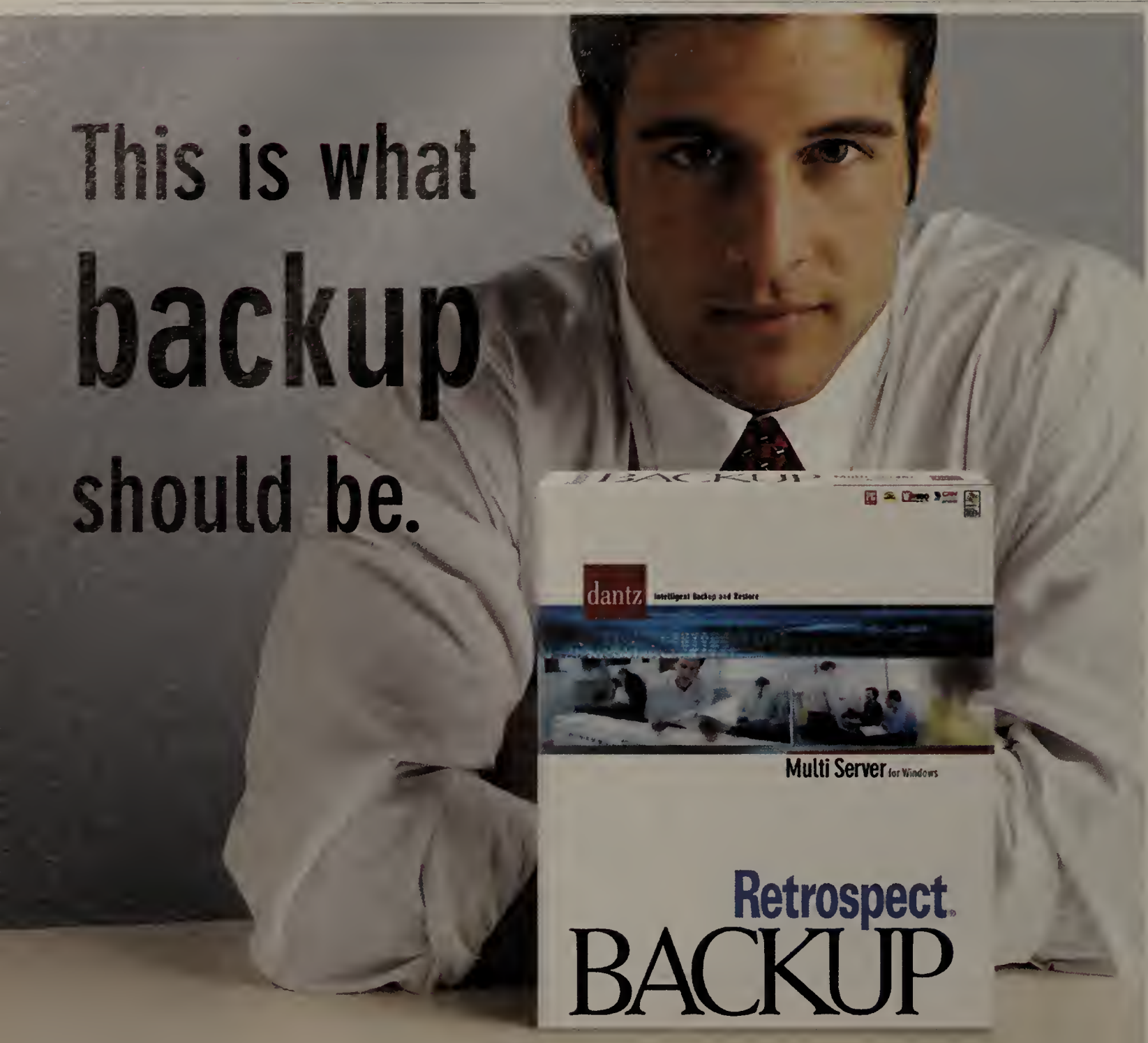
Back when I was a newly minted engineer at my first job, it dawned on me that gaming technology typically is a leading indicator for technology. Whatever people are doing for fun becomes something that companies later do for profit.

Most large service providers are feverishly working to optimize the performance of interactive games — which means understanding and implementing effective QoE network mechanisms. Vendors are developing monitoring and measurement tools that will let service providers offer QoE guarantees, which will make it possible for companies to roll out interactive applications above and beyond the entertainment variety.

The third development is storage-area networks and network-attached storage across the WAN. Companies today are experiencing two key business drivers: reducing costs and reducing risk. Many are consolidating facilities to cut costs, only to discover they've increased their reliability risks. Consolidating from 10 data centers to two increases the likelihood that a catastrophic network or server outage could take down the company.

That's why many folks are investigating remote storage facilities, which require high-bandwidth links and extremely high reliability. We know that the storage service provider (SSP) idea has been tried and failed, but we aren't talking about outsourcing the storage management. Companies are still plenty interested in networks capable of providing access to their own remote storage facilities — and that represents a potential bonanza for network providers.

Johnson is senior vice president and CTO for Greenwich Technology Partners, a network consulting and engineering firm. She can be reached at johna@greenwichtech.com.



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The Edge

■ SERVICE PROVIDER DEVELOPMENTS AT THE JUNCTURE BETWEEN THE ENTERPRISE AND THE NEW PUBLIC NETWORK

Short Takes

■ **The Optical Internetworking Forum** last week said it is developing specifications for providing security of management interfaces to optical network elements. The implementation agreements from this project will assist service providers in protection against denial of service, unauthorized access and modification of network elements and data, the OIF said. This is the first time OIF has addressed security as a stand-alone effort. OIF has passed an implementation agreement outlining the **Call Detail Records for User-Network Interface 1.0** billing. This specification lets carriers capture usage records on optical connections so they can offer usage-based billing for optical services.

■ Optical access equipment maker **Quantum Bridge Communications** last week announced the appointment of **Steve Linskey** as vice president of technology development. Linskey is a 25-year veteran of the cable and telecom industry. He was previously responsible for the design and implementation of broadband networks at Comcast Business Communications. Linskey was involved in CBC's rollout of the Quantum Bridge Optical Access System in some of Comcast's leading markets. He also worked at technology organizations such as Bell Labs and Bellcore.

■ **Cramer Systems and Sheer Networks** have partnered to offer service providers integrated network autodiscovery and service activation products for broadband services. The alliance combines Cramer's inventory management and provisioning products with Sheer's service activation and network autodiscovery system.

The result is a package that will enable service providers to reconcile inventory, topology and service configurations to reflect the actual network and all changes to it as soon as they are made, the companies say.

Energy giant offers MPLS VPNs

Schlumberger taps Cisco for new service infrastructure.

■ BY JIM DUFFY

HOUSTON — Oil and gas giant — and service provider — Schlumberger last week tapped Cisco to supply the infrastructure for its new Multi-protocol Label Switching-based IP VPN service.

Schlumberger has offered IT connectivity, security, outsourcing and consulting services to companies in the gas and petroleum industries for about 18 months. The new MPLS VPN service, called DeXa.Net Secure Private Network (SPN), is the latest connectivity offering from the $14 billion global energy company.

DeXa.Net SPN is designed to deliver faster, more reliable and more secure connectivity services to other energy companies. It also provides options for users to transmit large volumes of data, including video and other time-sensitive applications, Schlumberger officials say.

"We need to have a very reliable network with quality of service enabled to make sure that the drilling information you send from Nigeria back to headquarters in Houston is not delayed," says Jean-Michel Rouylou, vice president, Secure Connectivity Services for Schlumberger Network & Infrastructure Solutions (NIS). "Decisions are going to be taken based on the information people see on the screen. MPLS can let us carry over the backbone the quality of services, the differentiated services, but also can do it securely."

The DeXa.Net SPN backbone will employ up to 38 Cisco 12400 and 7206 routers in 30 points of presence. Currently, the service has 10 to 15 customers, including Actaris, a Belgium provider of meters, systems and services for utilities industries.

Schlumberger evaluated routers from Juniper Networks and Nortel's Passport multiservice switches for the DeXa.Net SPN backbone, along with the Cisco routers.

Juniper had better offering

Even though Juniper had a superior offering to Cisco's, Rouylou says Juniper lacked Cisco's broad global reach.

"Juniper came out as a better product," he says. "Unfortunately, the size of Juniper was a restricting factor in the sense that if you want to buy a Cisco router in Asia, Cisco is there; Juniper is not."

Cisco also is Schlumberger's incumbent enterprise vendor, so the company is familiar with the products and their command structures, Rouylou says.

Meanwhile, Nortel's Passport switches were ruled out because of their ATM core, he says. All of Schlumberger's applications are TCP/IP-based and Rouylou says the company wants to avoid a layer of overhead associated with protocol translation.

DeXa.Net SPN is a Layer 3 MPLS VPN service, meaning subscriber VPN routing information is shared among Cisco routers using the Internet Engineering Task Force's RFC 2547 specification and the Border Gateway Protocol. RFC 2547 has come under fire for alleged scalability and administration challenges resulting from a large number of subscriber routing tables, yet it's being rolled out by service providers such as Cable & Wireless, Global Crossing and others, in addition to Schlumberger.

Cable & Wireless and Global Crossing provide circuits to Schlumberger, but the gas and petroleum company says it is not merely reselling those carriers' MPLS VPN services.

Rouylou says Schlumberger has not experienced any scalability challenges with RFC 2547.

"I'm not saying that there will be no problem; I know that's one of the potential issues with MPLS," he says. "But we don't see that yet."

Schlumberger offers service-level agreements built around three classes of service: Standard, which provides SLAs for latency and availability; Premium, which measures latency, availability, throughput and packet drop; and Premium Plus, a multimedia service that measures jitter in addition to the parameters of Premium service.

Standard service provides no guarantees for dropped packets, while Premium and Premium Plus guarantee zero packet loss, says Clint Brown, marketing manager, Security Connectivity Services for Schlumberger NIS. Latency is reduced by 15% as subscribers move up in service class, he says, and 99.95% availability for the network core is guaranteed.

Schlumberger's end-to-end availability target is 99.7%, Brown says.

Schlumberger is offering committed information rates (CIR) but with no bursting capability. Instead, the company is offering bandwidth reservation with class of service whereby bandwidth above the CIR is provisioned within 24 hours and charged only when used.

Schlumberger is developing an algorithm to work with the MPLS traffic engineering and fast reroute capabilities of Cisco IOS routing software to reduce provisioning time to two hours, Brown says.

"That really makes it an on-demand service," he says.

Subscriber access circuits into the DeXa.Net SPN include private lines; frame relay; ATM; Fast and Gigabit Ethernet; and very small aperture terminal satellite.

The DeXa.Net SPN backbone operates at OC-3 and DS-3, which is slow by today's OC-48 and OC-192 standards, but it quickly can be upgraded as utilization approaches 50%, Brown says.

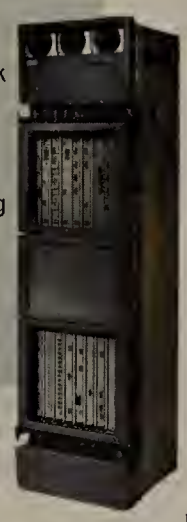
"The quickest way to go out of business is to have pipes lying empty," he says.

Currently, utilization on the DeXa.Net SPN backbone is 35%. ■

Duty calls

Cisco's 12400 router will execute the following tasks in Schlumberger's new MPLS network:

- 99.95% availability of network core.
- "Verifiable" QoS.
- Support for streaming audio and videoconferencing applications.
- VPN security.
- IP unicast, multicast and load balancing.



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Technology Update

■ AN INSIDE LOOK AT THE TECHNOLOGIES AND STANDARDS SHAPING YOUR NETWORK

CWDM can be a lower-cost alternative

■ BY AL LOUNSBURY

Coarse wavelength division multiplexing can be a lower-cost alternative to dense wavelength division multiplexing for short-haul (less than 31 miles) optical transport from the enterprise edge to the service provider metropolitan core.

WDM is a technology that funnels data from different sources at different bit rates and different protocols (such as Fibre Channel, Ethernet and ATM) onto an optical fiber.

Each data channel, or signal, is carried on its own private and secure color of light, or wavelength. A wavelength is commonly referred to as a lambda. Using WDM technology, from four to more than 80 separate wavelengths of data can be multiplexed into a light stream transmitted on one optical fiber.

On the receiving side, each channel is then demultiplexed back to the source. This is the same for all WDM systems, whether they are based on CWDM or DWDM technology.

The differences between CWDM and DWDM systems can be explained by outlining the major components of all WDM systems. These are:

- An optical laser (transmitter).
- An optical detector (receiver).
- Optical filters for multiplexing (add) and demultiplexing (drop).
- Optical amplifiers for distance extension.

Typically, the optical laser used for transmitting a signal and the corresponding detector used to receive the signal on the same wavelength that was transmitted are integrated into one transceiver. The actual amount of information that is transmitted on a single wavelength is determined by the bit rate of the laser.

DWDM lasers have a typical bit rate of up to 10G bit/sec, and CWDM lasers have a lower bit rate, up to 2.5G bit/sec. The price of a DWDM transceiver is typically four to five times more than its CWDM counterpart.

DWDM transceivers also tend to increase the associated operational expenses by consuming more power and dissipating more heat than CWDM transceivers.

CWDM applications are targeted for fiber distances of less than 31 miles, and do not require optical amplifiers.

The final major component is the optical add/drop multiplexer (OADM), which is used to add and drop wavelengths onto a WDM network. To transmit data, OADMs take in various optical input sources and then convert each data channel into wavelengths that are added to the WDM network. When receiving data, OADMs perform the inverse function, to demultiplex (drop) the WDM wavelengths into their original datastream.

The cost of a DWDM OADM is typically two to three times the cost of a wider-band CWDM OADM because a DWDM environment has a significantly smaller space between wavelengths (100-GHz typical spacing) than that used in CWDM systems (approximately 2,500 GHz). Closer wavelengths means more heat, and producing the units to account for this is more complicated, resulting in a higher cost.

On CWDM-based systems, the wavelength separation between each color of light on the fiber is significantly farther apart, or wider (by a factor of 20) than on DWDM systems. DWDM systems multiplex a large number of individual wavelengths into one fiber by using less space between each wavelength. Metropolitan DWDM systems readily support 32 and 64 wavelengths on a single fiber, and long-haul DWDM systems are typically higher densities. The actual frequency grid for DWDM and wavelength grid for CWDM systems are defined by the International Telecommunications Union standards G.694.1 and G.694.2, respectively.

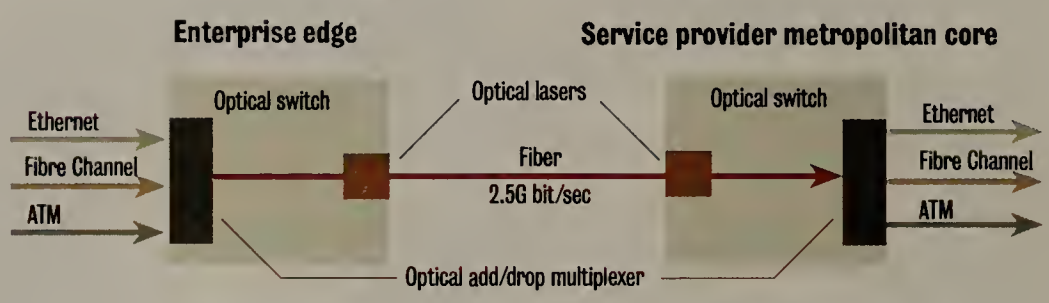
CWDM is best-suited for applications that have lower data-capacity requirements and for fiber spans that are 31 miles or less. This is the typical requirement for metropolitan-to-enterprise-edge applications, where the fiber distances tend to be shorter (less than 31 miles). As a result, lower-cost CWDM systems provide more economic benefits while providing the same security, reliability and quality as a DWDM system.

Lounsbury is a principal engineer for Nortel Networks Metro Optical group. He can be reached at al.lounsbury@nortelnetworks.com.

HOW IT WORKS

Coarse wavelength division multiplexing

CWDM can cost less and use less bandwidth than dense wavelength division multiplexing.



1. Datastreams from the enterprise edge enter the optical switch and are added to the optical network by the optical add/drop multiplexer (OADM).
2. The OADM converts each datastream into its own color of light, or wavelength.
3. Separate wavelengths are sent by the optical laser over a single optical fiber.
4. Optical laser in service provider metropolitan core receives optical transmission.
5. OADM demultiplexes, or drops the wavelengths back into their original datastream.

Got great ideas

■ *Network World* is looking for great ideas for future Tech Updates. If you have one and want to contribute it to a future issue, contact Features Editor Neal Weinberg (nweinberg@nww.com).

Ask Dr. Internet

By Steve Blass

We have a PPTP and Cisco client VPN on our router, and several users successfully use both services. But one user, who is set up on DSL, has PPTP connections that work for only a few minutes after. Then the link quits and shuts down his DSL connection. When he tries his Cisco client 3.5.2 rel k9 it fails, citing no valid response from the server.

It seems to be a matter of setting PPTP connection timeout parameters on either the client or the server. Support.Microsoft.com provides information for adjusting Windows NT server settings. Others have reported success by adding the following two registry entries to the client PC:
HKEY_LOCAL_MACHINE\System\CurrentConfiguration
\Services\RASPPTPE\Parameters\Configuration\
EchoReplyTimeoutSeconds REG_DWORD 0x168
HKEY_LOCAL_MACHINE\System\CurrentConfiguration
\Services\RASPPTPE\Parameters\Configuration\
InactivityIdleSeconds REG_DWORD 0x168
EchoReplyTimeoutSeconds controls the time the client waits for a reply to a keep-alive packet. InactivityIdleSeconds controls the time the client waits before sending a keep-alive packet.

Blass is a network architect at Change@Work in Houston. He can be reached at dr.internet@changeatwork.com.

GEARHEAD INSIDE THE NETWORK MACHINE

Mark Gibbs

Sit back and listen to the tunes

We have in previous Gearhead columns 'fessed up that we are music junkies. We put on music when we get up, drive, start work, stop work, cook ... pretty much all the time. Thus it is not surprising that when we heard about the Turtle Beach AudioTron, we had to get our hands on it.

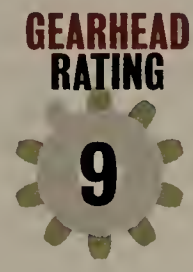
The AudioTron (see www.nwfusion.com, DocFinder: 1840) might be thought of as a music router: It finds and accesses network shares that have MP3, WAV and Windows Media files, retrieves them and outputs their content to your amplifier. While the AudioTron can be controlled from its front panel, it also presents a Web interface.

The AudioTron is a black-finished, 19-inch, rack-compatible unit with a large front-panel display, a rotary selector and a number of buttons. There's also an infrared remote control included.

Setup is simple: Plug in power; connect to Category 5 Ethernet or HomePNA connection; connect audio output to stereo (either via the standard stereo RCA jack output connectors or via the S/PDIF digital output TOSlink FiberOptic connector); and switch it on. You also can have multiple AudioTrons on the same network.

By default, the AudioTron looks for a Dynamic Host Configuration Protocol server, gets its network configuration settings, then scans the network looking for shares that contain music files, and builds a catalog to index them.

This can take a while if you are blessed with music as we are (14,483 music files — that takes about 20 minutes to index).



Turtle Beach AudioTron

1=awful, 10=insanely great

Once the catalog is complete, the display offers a menu of artist, album and so on, so you can select what you want to hear using the front-panel rotary switch. You can configure the system and control volume, bass and treble boost.

The AudioTron comes with set-up software that can test the system and create indexes in each directory where music files are to be shared. These indexes speed up the AudioTron's start-up, as it no longer has to run a complete scan.

The problem is that the set-up software doesn't seem to do a good job of indexing. Fortunately, there's a pretty enthusiastic and active third-party developer community surrounding the AudioTron (DocFinder: 1834). We downloaded a utility called AudioTron TOC Generator (DocFinder: 1835), which did a far better job. Scan time dropped to perhaps 10 seconds!

The built-in Web server (GoAhead's open source GoAhead Embedded WebServer — DocFinder: 1836) provides more control over the AudioTron than the front-panel interface and you can set all sorts of parameters, including exactly which shares the AudioTron uses to search for music files.

The output quality is great and we didn't see any playback problems such as the music stuttering until we heavily loaded the network. Even then, the buffering done by the AudioTron will comfortably handle brief congestion problems without the playback faltering.

Playing music files isn't all the AudioTron can do. It also can find and play Internet radio station streams.

The AudioTron has two Web content layouts — one for regular Web browsers and a "thin" version for browsers running on PDAs. So we accessed the AudioTron Web interface from the 802.11b-equipped Zaurus we reviewed a couple of weeks ago, and by golly, it worked just fine and looked good too!

An AudioTron can be front-ended by applications that manage the Web interface. A good example of this is Alternatron (DocFinder: 1837), which is available for both the Mac and Windows.

Alternatron manages the AudioTron's interface and downloads all the track data that any AudioTron knows about to find, queue and play tracks very fast. It also can integrate with the CD database to retrieve additional track and album information and can import cover art to be displayed as the album plays. As if that isn't enough, it can create the table of content which ensures that AudiTron starts fast.

Another front end is JavaTron (Doc Finder: 1838) written (need we say?) in Java that has the benefit of not needing a browser and loading fast.

The AudioTron is quite amazing although a little pricey at $300. On the other hand, when you get one in your system we think you'll love it. We award the Turtle Beach AudioTron nine gearteeth out of 10.

Sound off to gearhead@gibbs.com.

CoolTools

Phones, cards for Sprint's new 3G nets

Quick takes on high-tech toys
By Keith Shaw

In case you hadn't heard yet, Sprint PCS launched its Code Division Multiple Access 1x network earlier this month, which it is calling the PCS Vision network. The network promises to be nationwide (caveat — nationwide in areas with more than 100,000 people), and will give data speeds up to 144K bit/sec in bursts, with average data throughput in the 50K to 70K bit/sec range.

To take advantage of the new network, you'll need a Vision-enabled device. Luckily, Sprint and its partners have announced several devices that will become available over the next few weeks:

The Handspring Treo 300 is the first Treo Communicator to work on a CDMA 1x network.

Phones/PDAs

- Handspring Treo 300 — The first Treo Communicator that works on a CDMA 1x network, the Treo 300 includes an integrated and backlit keyboard, and can run programs for the Palm operating system. Through Sprint's Business Connection program (which uses the Seven platform for e-mail), Treo users will be able to access their Microsoft Exchange server for "always on" e-mail. Cost: $500.
- Toshiba 2032 — An integrated Pocket PC phone from Sprint, the 2032 comes with a full-color display, 206-MHz Intel StrongArm processor, 32M bytes of RAM, and will run Pocket PC applications. Cost: $800.
- Samsung A500 — Offers a bright color screen and the ability to take photos with the add-on Vision Camera. Cost: $300.
- LG Infocomm's 5350 — Includes color screen, multitone games, ringers and musical keypad options. Cost: $230.
- Samsung N400 — Flip-phone form factor that includes color screen, and the ability to take photos with the Vision Camera accessory. Cost: $200.
- Hitachi P300 — The first Hitachi model offered in the U.S., this phone will offer a color screen and personalization options. Cost: $300.
- Sanyo 4900 — Includes a 1.7-inch color display, speakerphone and luminescent keypad backlight. Cost: $180.

Data cards

- Novatel Wireless PCS Connection Card (Merlin C201) — PC card that Sprint says will be able to send and receive data at average speeds of 50K to 70K bit/sec, with bursts of up to 144K bit/sec. The card has a built-in antenna and is compatible with laptops (Windows 98, 2000, ME, XP) and handheld devices (Pocket PC 2000 and 2002 with a Type II PC Card slot). Cost: $250.
- Sierra Wireless PCS Connection Card (AirCard 550) — In addition to receiving data through the PC Card, this card also can send and receive voice calls while using an earbud. This is the same card that is used on Verizon Wireless' CDMA 1x network. Cost: $350.
- Yiso PCS Connection Card (CF 2031) — PC Card that will let users make voice calls in addition to sending data through a laptop or handheld. Cost: $230.

The Merlin C201 is compatible with many laptops and handheld devices.

Accessories

- PCS Vision Camera — Sold through Sprint, the Vision Camera from InfoHand will give a point-and-click experience to capture, share and manage full-color pictures on Samsung's N400 and A500 phones. Cost: Less than $100.

Pricing

Sprint will offer business and consumer PCS Free and Clear plans, which provide separate allotments for voice calls and data applications: minutes for voice calls and megabytes for data usage.

- PCS Free & Clear with Vision — Ranging in price from $45 to $120 per month, this plan will include megabytes for data usage along with varying amounts of voice minutes, depending on the plan.
- PCS Vision for Laptops and PDAs — Sprint is offering business customers introductory rates for data plans: $40 per month for 20M bytes, $60 per month for 40M bytes, $80 per month for 70M bytes and $120 per month for 120M bytes. Business customers also can get unlimited data usage for $50 per month for the first three months, then $100 per month thereafter, with a one-year agreement.

Shaw can be reached at kshaw@nww.com.

EDITORIAL

John Dix

Guiding Web customers to sales nirvana

It goes without saying that the easier you make it for customers to find what they want on your Web site, the greater the chance you land a sale.

Hence the fascination with improving search technology.

But search only addresses part of the problem. How do you help people that aren't sure about what they're after?

Enter Endeca, a young company promoting the idea of guided navigation in place of the traditional query/retrieve. The problem with the latter, says company co-founder and CEO Steve Papa, is the implicit assumption that the customer knows what he's looking for or how to find it.

Guided navigation is all about helping the customer narrow the options by providing guideposts along the way.

For example, go to Amazon.com, select classical and search Chopin. It returns three favorites and 2,507 other options. It also offers a link to matches in Instruments, Ballets & Dances and Short Forms.

Now try that at Towerrecords.com, a site powered by Endeca. Like Amazon, the site returns an overwhelming 1,405 matches. But the page also lets you narrow the search by price, title, conductor, instruments, recording label, language, orchestra, performer, new releases, out-of-print recordings and live recordings.

Papa says this approach of adding context and providing position and relevance is more in keeping with the way people shop. Endeca claims Towerrecords.com's use of the technology drove order sizes up 28%.

Besides retail, Endeca is focused on internal enterprise use, helping companies find and reuse resources instead of building them anew, potentially a huge cost savings.

The system essentially consists of a set of indexes layered over your product database. The Endeca Data Foundry harvests information from production databases and stages it in the Endeca Navigation Engine, which is linked to your Web application server.

That's easy enough to set up. The hard part is creating the categories used to aid navigation, and mapping products accordingly. While work-intensive — a step that search firms such as EasyAsk sidestep (www.nwfusion.com, DocFinder: 1827) — Papa says Barnes & Noble, which has 2 million books, was able to deploy in two to three months. The system isn't cheap — from $60,000 per year for three years to millions of dollars per year, depending on capacity — but if it can drive sales or help you reuse expensive resources, it might be worth a look.

— John Dix
Editor in chief
jdix@nww.com

opinions!

NetWare vs. Windows

Regarding Linda Musthaler's column "NetWare: It just works" (www.nwfusion.com, DocFinder: 1822): NetWare is a fine product, and having been trained on Version 4, I am familiar with its stability. But I disagree with some points Musthaler makes regarding Microsoft's NT products after Version 4.0 (namely Windows 2000 Server). Our environment consists of 16 servers running Windows 2000 Server or Advanced Server and two network-attached storage devices running embedded Win 2000 Server. Our servers are at 99.999% or 100% uptime. While I can share the frustrations with NT 4.0 network stability issues, Microsoft's newest network operating system (NOS) is very stable.

Because Microsoft's NOS is similar to its desktop interface, many underqualified staff at smaller companies are suffering from lack of knowledge rather than with stability. Many are unfamiliar with the underlying workings of DNS in Active Directory environments, and because Active Directory requires DNS to operate correctly, issues relating to incorrect DNS configurations might appear to some staff as an issue with the NOS. While hot fixes are definitely an issue, they are an issue with all software products. I firmly believe if staff has adequate technical experience and knowledge, they will have a stable network using Novell or Microsoft technologies.

Dave Schmidgall
Network administrator
Superior Industries
Morris, Minn.

My experience with NetWare servers is that they just run and run. Very rarely do I have to administer them. The problem lies in that all our mainline business applications require Windows, not NetWare. This is not simply a matter of picking an app that runs on NT or Windows 2000 over one that runs on NetWare. The applications are either no longer or never were available on NetWare.

I love Novell's products, but I can't justify the expense just for file and print sharing. The best technology very rarely wins. Your users don't care which network operating system you run; they only care about the applications.

Stephen Hoult
Network administrator
Nashville Public TV
Nashville

We are a small business that has been using NetWare for 10 years without one unplanned downing of a server. NetWare really does "just work."

NetWare and ZENworks have simplified network management tremendously. But with Novell's lack of marketing and the public's perception of it as a sidelined company, it is sometimes difficult to convince others that we should stay the course with Novell's products. Columns like Linda Musthaler's, and awards for NetWare 6, ZEN and GroupWise, help me persuade those who ask why we don't use Microsoft for our network that Novell really is the right choice.

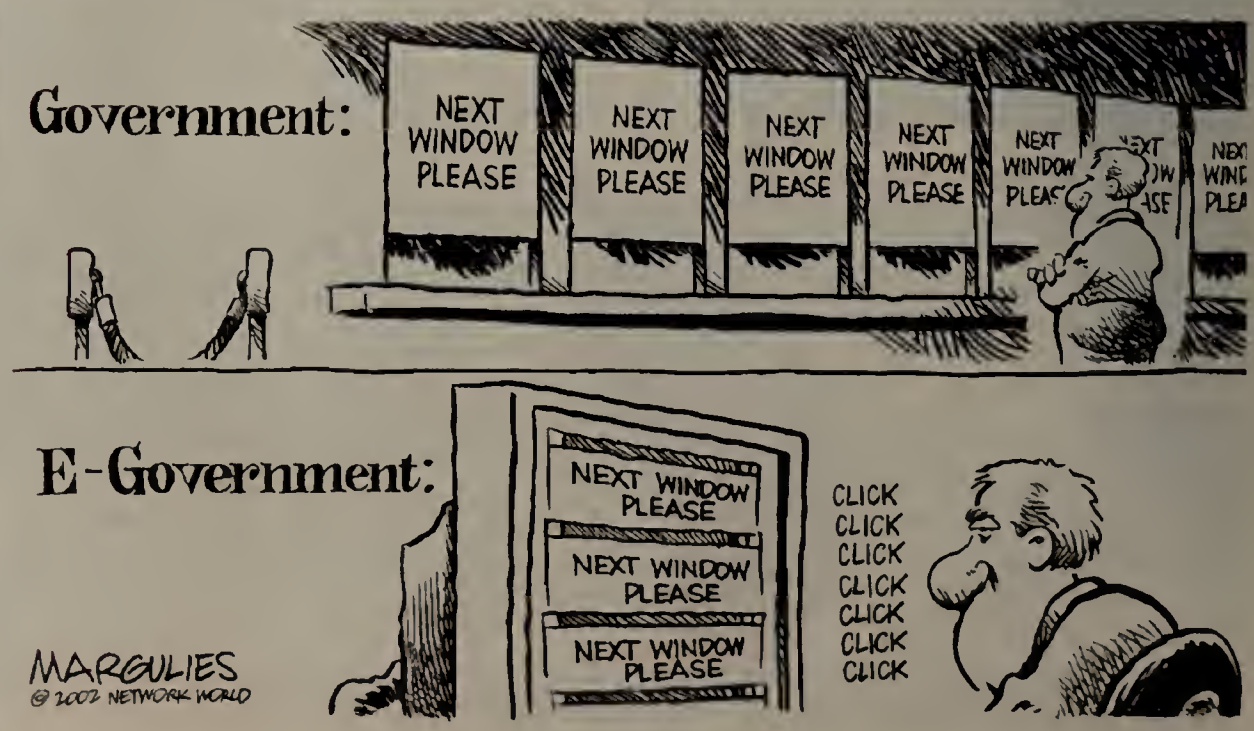
Eric Ehrenfeld
Vice president
The Michael Ehrenfeld Company
San Diego

I am neither a Microsoft basher nor a Novell zealot. Regardless of the operating system, uptime and availability are merely projections of the professionals, policies and procedures that maintain the infrastructure — do your job right, and the operating system is stable. We all need to get past the hyperbole and on to how to "do" IT. The technologies and vendors will change, but our jobs should not.

Sean Farney
Chicago

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.

More online! www.nwfusion.com Find out what readers are saying about these and other topics. **DocFinder: 1821**



INTRANET ADVISER

Daniel Blum

Plan on SAML for identity mgmt.

The challenges are many, but they are unlikely to stop the SAML/Liberty train.

The Security Assertion Markup Language interoperability bake-off and release of an eagerly awaited specification from the Liberty Alliance last month mark historic steps forward for Web services, security and distributed applications.

An XML-based standard, SAML provides a means for applications or security servers to exchange portable identity assertions that authenticate or authorize users.

The Liberty Alliance Version 1.0 specification builds on SAML, enabling identity domains keeping local accounts or profiles for the same user to link those records on an opt-in basis.

Together, SAML and the Liberty specification are great tools to expand your identity management options. A traveler could make car, hotel and airline reservations from a single site while taking advantage of frequent flyer, renter and guest "loyalty accounts" held at multiple companies. A doctor could federate from a hospital IT system to a third-party imaging company's X-ray database with roles-based access control.

As the excitement of SAML/Liberty's debut fades, however, sober reflection must begin. The standards will provide great tools, but companies need to understand how and where to use them. And there's still much work to be done.

First and foremost, additional common-denominator standards, legal or commercial frameworks, and best practices for federated identity will be needed. Today, you can hope to work with partners across peer-to-peer, hub-and-spoke or small circles-of-trust arrangements. But just as it was difficult at first to interconnect regional ATM networks into a global financial system, multiple challenges will limit universal, multi-party use of SAML/Liberty.

Among these challenges are competitive disincentives for sharing data between businesses, practical difficulties with Web security and lack of scalable public-key infrastructure (PKI) trust models.

Early adopters will face familiar and unfamiliar pitfalls, but these will be manageable. Allow some time for growing pains with early products supporting the standards. Federation can't occur in an identity vacuum, so you'll have to continue the sometimes painful process of building authoritative directories in-house. However, federation tools provide a possible solution for linking existing directories. Looking forward, lawyers and business owners must create the privacy policies and trading-partner agreements underpinning trust relationships. But establishing agreements and trusts for SAML/Liberty can be significantly easier than designing a full-blown PKI or other alternatives.

The challenges are many, but they are unlikely to stop the SAML/Liberty train. Federated identity can bring real business benefits. Look for federation opportunities across the Internet, among business units, or even between disparate IT systems. Factor SAML/Liberty into your identity management architecture.

Blum is senior vice president and research director with The Burton Group, an integrated research, consulting and advisory service. He can be reached at dblum@burtongroup.com.

TELECOM CATALYST

Daniel Briere and Russ McGuire

Telecom scared stupid

Very few are seriously thinking about how to reshape their business in the restructured industry . . . .

We have clients all over the world, in all aspects of telecom. Service providers. Vendors. Software developers. Chip makers. Management consultants. Wireline, wireless, cable, telephone companies, cellular. The works.

And they have all turned dumb. Not a smart one in the bunch. Try as we might, we cannot get past the paranoia, closed-mindedness, surrender and "throw myself on the mercy of the court" mindset that now grips our industry.

Everyone wants to do what it takes to just keep their job. Nothing creative. No sticking a neck out. Keep under budget. Those who do nothing, oddly, get the greatest praise today.

We're watching one client firm slowly go down because of their mindset of cutting costs to the bone and riding it out. Wall Street is watching them and rewarding their diligence. But they fail to see that their competitive advantage will evaporate in about a year, because of technical obsolescence.

At another client, an executive says the corporate strategy won't work, and by the time the company figures it out, it will be too late. But he's not about to do anything because "they don't want to hear it." So he'll meet his numbers for the next two quarters, and migrate to another job somewhere. He's a good guy, he'll find a job. The rest of the company won't.

Then there's the case of the equipment vendor that has held up a carrier network contract finalization for almost six months because they could not confirm one piece of data required for the final paperwork. Note: The answer was given in the bid process; the carrier just wanted it confirmed. All the equipment vendor needed to do was to certify the original statements, which met certain thresholds, and they were in the clear. Four presidents of the company got involved, and numerous answers to the questions were speculated. No one could give an official answer that was supportable. Finally, someone at the vendor company decided to go out of house for an independent opinion. That answer failed to meet the thresholds the carrier required, so the carrier dropped that vendor. Seems an atrocious waste of six months of work, especially after the vendor effectively had won the bid.

Or the case of another equipment vendor that did not want to send equipment to be tested for a network bid, because they did not think they had a chance in the sales process. Not sending the equipment for testing ensured they were right.

The equipment vendors aren't the only ones being stupid. Almost every U.S. provider we work with is sitting dumb. Those in bankruptcy are focused on the tactics of getting out. Those not yet in bankruptcy are focused on the tactics of how to avoid it. Very few are thinking seriously about how to reshape their business in the restructured industry — or even what that industry will look like.

Which businesses should they be in; which should they exit? Which markets should they enter; which should they abandon? These are strategic issues, but if they're being evaluated today, it's purely a short-term financial analysis. The financially "right" answer is the lazy answer. We're having trouble finding anyone brave enough to pursue the real "right" answers — the ones that will still be right a year from now.

Every day it's a different company, same attitude. The market is hopeless. No one is buying anything. We're just going to wait and outlast everyone else. They have to start buying sometime.

Lethargy, resignation and depression have set in, and are causing people's actions to be stupid in the end.

We need to wake up. Smell the coffee. And kick the person standing next to you in the pants.

Or, here's another strategy. On a given day, we'll take all those who still have jobs and fire them. Then we'll hire back all those without jobs. Hey, they may not be the smartest of the bunch, but at least they're not deer stuck in headlights. We'd rather work with people willing to try than those who have given up.

Briere is CEO and McGuire is chief strategy officer of TeleChoice, a market strategy consultancy for the telecommunications industry. They can be reached at telecomcatalyst@telechoice.com.

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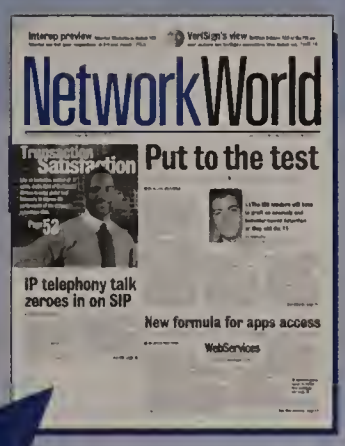
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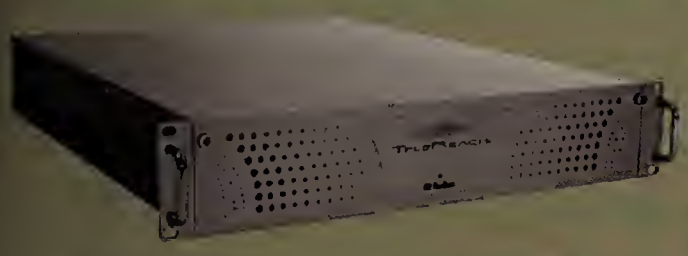
Who we looked at

DSR2161, DS1800 and DSView software

Company: Avocent Corp., (256) 430-4000, www.avocent.com

Cost: DSR2161 is $4,495 for two digital users, one local user; DS1800 starts at $7,995; DSView starts at $750.

Paragon Matrix UMT442 and TeleReach KVM Access-over-IP appliance



Company: Raritan Computer, (800) 724-8090, www.raritan.com

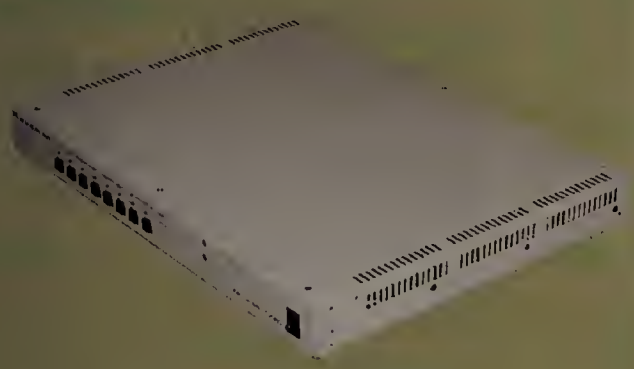
Cost: Four-user, 42-port Paragon Matrix UMT442 Switching Unit starts at $4,500; TeleReach DVM Access-over-IP appliance starts at $5,495.

Rose UltraMatrix and UltraLink

Company: Rose Electronics, (800) 333-9343, www.roseelectronics.com

Cost: UltraMatrix starts at $4,800; UltraLink starts at $5,000.

Kaveman



Company: Digital V6, Inc., (905) 513-3107, www.digitalv6.com

Cost: Starts at $4,800 for eight-channel unit.

FreeVisionIP

Company: CCC Network Systems, Inc., (516) 931-8888, www.cccnetsys.com

Cost: Starts at $600 per server.

Advancing the art of KVM switches

KVM via IP brings new ways to manage the server farm.

■ BY BARRY NANCE, NETWORK WORLD GLOBAL TEST ALLIANCE

Networked keyboard, video and mouse (also known as KVM via IP) is the third major step forward in server operations management. The first step was mounting servers in racks, while analog KVM provided the second step. You can imagine what server farms would look like without these advances.

KVM via IP lets you control servers from a greater distance than analog KVM did. While analog KVM devices and servers typically must be within several feet of each other, KVM via IP extends server control across the breadth of your IP network or even the Internet.

In addition to access over 10/100 Ethernet, you often can use a dial-up connection or Web browser to control your servers. KVM via IP devices help monitor server health, scale better than analog KVM, offer multiuser access and, to an extent, reduce the complexity of the jungle of cables connected to your servers. Because you can daisy-chain KVM via IP devices, they're highly scalable.

KVM via IP devices digitize keyboard, video and mouse signals into compressed and encrypted IP datastreams. The networked KVM data flows to a central unit to which the physical keyboard, monitor and mouse are attached. Unless you have plenty of spare bandwidth on your regular network, putting the KVM devices on their own network segment is a good idea. High-resolution video data, even compressed, can chew up production bandwidth you might not want to allocate to KVM. "Out-of-band" KVM also can provide access to your servers even when routers or other "in-band" network components fail. The central unit may have a serial port to which you connect a modem for remote access, and it may even provide Web-based server management via a browser-based Java applet.

To reveal the current state of the art regarding KVM via IP, we invited vendors to submit their network-based interaction-consolidation devices to our Connecticut lab for evaluation. Avocent sent its DSR2161 and DS 1800 devices along with its DSView software. CCC Network Systems gave us a look at FreeVisionIP Version 3.0. Raritan Computer shipped us a Paragon Matrix UMT442 and a TeleReach KVM Access-over-IP appliance. Rose Electronics sent its UltraMatrix and UltraLink products, while Digital V6 submitted a Kaveman unit.

All units supplied reliable operation, excellent and responsive server control (as long as we didn't use the vendor's browser-based interface) and easy, quick installation. Bandwidth utilization in all cases was reasonably low. It was almost unmeasurable when we used the KVM switches with NetWare servers and less than 5% to 20% in the presence of our Windows- and Solaris-based servers. Utilization was low because the vendors' compression algorithms are high-quality and because we performed typical server administration tasks in our tests instead of trying to stress-test the switches by running, say, Microsoft Flight Simulator. KVM via IP devices are more expensive than their analog counterparts, but server farm administrators who need to control their servers from more than a few feet away will find KVM via IP worthwhile.

Avocent's DS1800 and DSR2161

The DSR1800 is a network-based KVM unit with PS/2, Sun and Universal Serial Bus (USB) server ports. You can connect up to eight servers to each DSR1800; it supported

eight concurrent users and worked with video resolutions up to 1,280 by 1,024 pixels in our tests. In contrast, the DSR2161 is a unit intended for PS/2-centric (such as Intel-based) servers. It has 16 server ports, supports one local and two digital concurrent users, and worked with video resolutions up to 1,280 by 1,024 pixels. The DSR2161's thoughtful design uses standard Category 5 cabling to connect servers to the KVM switch, which means you can locate the DSR2161 farther from the servers.

You can connect a physical monitor, keyboard and mouse directly to the DSR2161, and you can use Avocent's IP-based DS View software (a Windows application) to manage your servers over the network. DSView is the only server management interface to the DS1800. In contrast to the TeleReach and Kaveman units, the DSR 1800 and DSR2161 don't offer browser-based access. (The company's new Auto View 1000R and AutoView 2000R KVM switches should be available soon. The accompanying AVWorks software offers a browserlike visual interface, with AVWorks acting as the Java-based browser.)

Both units behaved transparently and unobtrusively in the lab. Switching between servers was a breeze. The vendor's DSAuth user authentication software, which stores permissions, passwords, topology and per-device contact information, ensured secure access to our servers.

Raritan's Paragon Matrix and TeleReach

The three components of a Paragon Matrix KVM system are a central Matrix Switching Unit, a User Station to which you attach the physical monitor, keyboard and mouse, and a Computer Interface Module, which connects each server to the Matrix Switching Unit. Each Matrix Switching Unit can connect up to 16 User Stations to up to 64 servers' Computer Interface Modules. Paragon Matrix worked with video resolutions up to 1,600 by 1,200 pixels.

TeleReach, an appliance you attach to a Paragon Matrix system, offers server control for up to four concurrent users via a Web browser or dial-up modem. It worked with resolutions up to 1,280 by 1,024 pixels.

Paragon and TeleReach enforced password-based security on our server accesses, and we could choose from three modes of operation for each server session. These modes are Private, which grants exclusive server access, PublicView, which lets multiple users see the server's screen, and PC-Share, which lets multiple users interact simultaneously with the same server.

Rose Electronics' UltraMatrix and UltraLink

The UltraMatrix UMT442 is an analog (non-networked) KVM unit that consolidates up to 16 PS/2, Sun or USB server connections while offering up to 16 users concurrent access. It has a modular design that makes expansion painless. UltraLink, which adds an IP link to an UltraMatrix KVM device, worked with resolutions of up to 1,280 by 1,024 pixels and provides server control via Rose Electronics' Windows-based Remote Access Client software. Gaining access to KVM-attached servers through UltraLink and the Remote Access Client is a simple matter of supplying the IP address of an UltraLink device.

UltraLink challenged us to supply a password for each server we accessed, and it coordinated with the Remote Access Client to put video displays from up to four servers on the same monitor. We loved being able to size and move each server's display at will. UltraLink has a serial port for dial-up modem connections that worked without a hitch.

CCC Network Systems' FreeVisionIP

Connected to each server, a FreeVision Extender Mini-transmit device collects servers' keyboard, video and mouse data, and sends the data to a FreeVisionIP switch. The switch in turn connects to a FreeVisionIP server that compresses the data and makes the KVM data available across an IP network. Administrators use CCC Network Systems' Windows-based client software to access FreeVisionIP-managed servers. In tests, FreeVisionIP worked with video resolutions up to 1,024 by 768 pixels for two concurrent users. FreeVisionIP switches have eight or 16 server connections and two IP network ports. (The forthcoming Version 4.0 switch will have four ports.)

The FreeVisionIP server is a rack-mounted Windows NT 4.0-based computer with one 10/100 network adapter and preinstalled FreeVisionIP server software. The FreeVisionIP server interfaces with the incoming video signals via a PCI-based video grabber card.

Digital V6's Kaveman

A Kaveman unit adds IP connectivity and browser-based server access to an existing KVM system. It worked with video resolutions of up to 1,280 by 1,024 pixels and supported up to 10 users in our tests. Following Digital V6's recommendations, we used Internet Explorer 6.0 and Java Runtime Environment 1.4 with Kaveman. Although server keyboard, video and mouse responsiveness was a bit sluggish, Kaveman was otherwise trouble-free and reliable in our tests.

Kaveman wasn't quite as easy to set up and install as the other products, requiring us to reset each server's mouse speed and acceleration for graphical interfaces such as Windows and Solaris.

Placing a special emphasis on security, Kaveman supports x.509 certificates, offers 128- or 56-bit Secure Sockets Layer encryption and can use the RC4 or Data Encryption Standard encryption algorithms. It has what Digital V6 calls a stealth mode, which prevents port scans and other probes by hackers, and a turtle mode, which automatically disables Kaveman when it detects intruders. Resetting turtle mode requires manual intervention at Kaveman's local console. For training and other purposes, multiple users can concurrently connect to the same server.

The future of KVM via IP

After testing these devices, the fourth significant step forward in server operations management will likely be the natural extension of Bluetooth wireless technology to connect servers to a nearby central unit, which could then connect to a physical keyboard, monitor and mouse. A wireless device attached to each server would only need to have keyboard, video and mouse ports for the short cables from the server, along with a radio link with a radius of a few hundred feet. This approach would virtually eliminate the cable jungles that plague many server farms.

Alternatively, for Windows, Solaris, AIX and other operating systems, KVM vendors might opt to write drivers that intercept keyboard, video and mouse data and shunt that data to a central unit via a network interface card in the server. The driver alternative will be less attractive to customers who abhor adding any software to their established corporate standard server configurations. On the other hand, converting KVM data into network data directly inside the server via driver software means that a server would need only one connection to the outside world — the network cable.

Another suggestion is adding SNMP to KVM devices (FreeVisionIP already supports SNMP). For KVM via IP systems that have a separate out-of-band network segment connection between the servers and the KVM-attached keyboard, monitor and mouse, SNMP doesn't make sense. However, if you send KVM via IP data in-band, across your company's regular network, using Hewlett-Packard's OpenView or other network management system products to handle SNMP alerts from KVM devices could be quite useful.

The KVM via IP enhancements we envision won't appear any time soon. But for nearly every collection of servers — but especially for server farms with analog KVM devices in close proximity to servers — KVM via IP eases distance limitations and offers excellent server monitoring and control capabilities.

Nance, a software developer and consultant for 29 years, is the author of Introduction to Networking, *4th Edition and* Client/Server LAN Programming. *His e-mail address is barryn@erols.com*

How we did it

Our test bed network consisted of six Fast Ethernet subnet domains connected by Cisco routers, back-to-back Visual Networks DSU/CSUs configured for 384K bit/sec frame relay and a Covad 384K bit/sec SDSL Internet link. Our client operating systems included Windows 98/ME/NT 4.0/2000, Red Hat Linux 6.2, Macintosh System 8, Solaris 8.0 and OS/2 Warp 4.0. The relational databases on the network were Oracle 8i, Sybase Adaptive Server 11.5 and Microsoft SQL Server 2000. Windows NT/2000 and NetWare 5.1 shared files, while Internet Information Server, Netscape and Apache software served Web pages. The network's transport layer protocols were TCP/IP, IPX/SPX, AppleTalk and SNA.

We used up to 16 server computers to test each KVM via IP switch. These servers included Windows 2000 Advanced Server running on a four-way Compaq ProLiant ML570 computer with 900-MHz Pentium III CPUs, 2G bytes of RAM, eight 18G-byte SCSI RAID drives and two NC3134 10/100 network adapters. Windows NT 4.0 (SP 6) ran on three Gateway NS-8000 computers with 333-MHz Pentium II dual processors, 512M bytes of RAM and three 9G-byte SCSI RAID drives. Solaris 8.0 ran on Sun's Sun Blade 100 Workstation with a 500-MHz UltraSPARC-IIe CPU, 2G bytes of RAM and 15G-byte Integrated Drive Electronics disk drive. Red Hat Linux managed a single-CPU Gateway NS-7000 computer with 333-MHz Pentium II processor, 512M bytes of RAM and three 9G-byte SCSI RAID drives. An Agilent Advisor protocol analyzer generated packets, and decoded and displayed network traffic.

We also used an IBM ThinkPad A21m with 850-MHz Pentium III processor, 512M bytes of RAM and a 32G-byte hard disk to test KVM via IP remote access.

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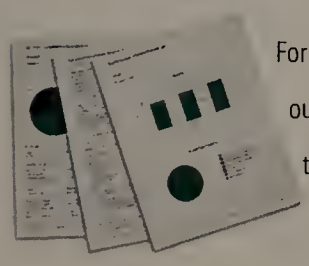

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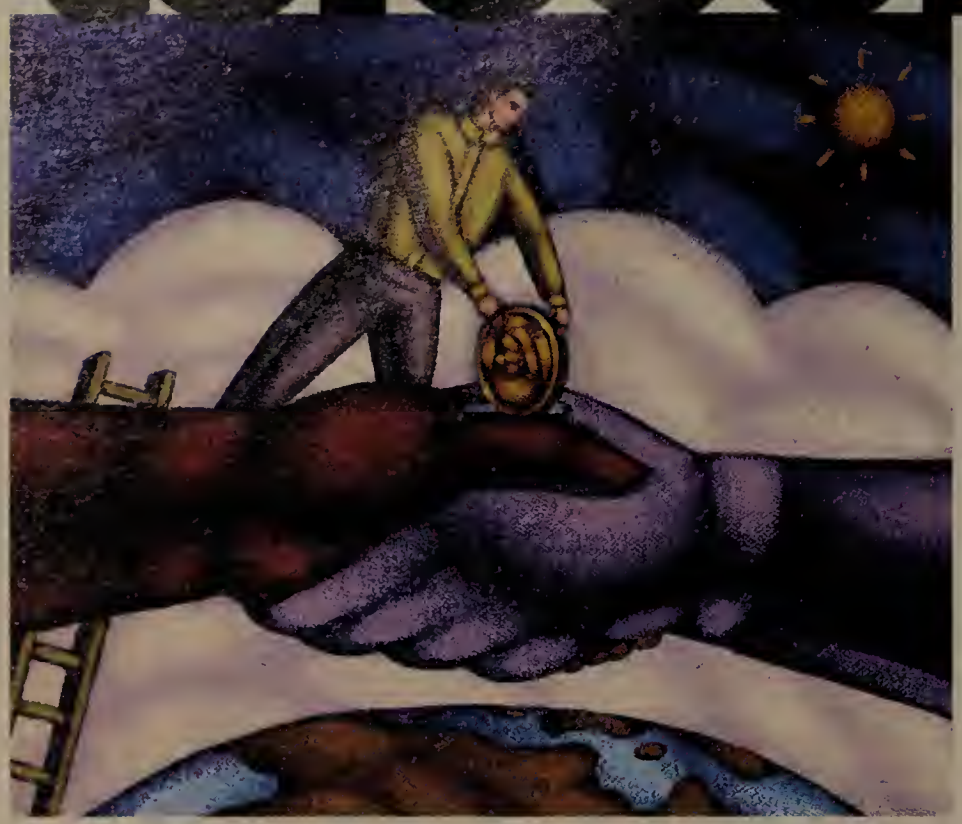
Challenging times for telecom deals



You need strong leverage to successfully negotiate a favorable contract with carriers.

■ BY BRETT MACHTIG

Network executives have come to expect double-digit annual price declines for voice and data services, but that's no longer realistic in today's volatile market. Negotiating a world-class contract is a lot more difficult in this era.

Virtually all carriers are struggling with financial issues of varying degree, while the downturn has simultaneously increased the pressure on enterprise customers to cut costs. As these opposing forces square off, the only way to win the best prices is to have leverage now and throughout the term of your contract.

Market madness

It has been a buyer's market for telecom service since the Telecommunications Act of 1996. Unparalleled access to venture funds and IPO capital spawned a host of new local and long-distance providers. Fierce competition and oversupply gave IT executives the upper hand in contract negotiations.

But then the tech sector crashed, and the carriers began to crumble. The WorldCom debacle is just the latest in a long line of telecom bankruptcies, including Global Crossing, McLeod USA, PSINet, Winstar and XO Communications. Qwest may be the next to follow.

WorldCom's bankruptcy has caused AT&T and Sprint to tighten their purse strings and shift focus away from price and onto financial stability. AT&T's new tagline, "Yesterday, today, tomorrow" conveys that message. Sprint has been the best opportunist, selectively stepping in to offer aggressive prices and perhaps a more stable choice.

If you lack contract leverage, AT&T, Sprint and WorldCom have become more difficult to negotiate with. Carriers have been reluctant to improve pricing or change limiting terms and conditions.

Good contract leverage comes from having uncommitted traffic, increased voice or data usage, an annual review clause that lowers your future commitments, or from a contract that expires within 18 months. Poor contract leverage comes from having overcommitted traffic, decreased usage, or a contract that you recently signed or one that is more than two years from expiring.

But if you hold the cards, custom negotiated rates on legacy services are still being reduced, albeit at a slower rate. But customers have more of a burden to prove that a rate reduction is warranted. This proof becomes very tricky in today's environment. Compounding the challenge is the Federal Communication Commission's "detariffing" edict, which lets carriers provide some of their rate information on their Web sites or directly to consumers rather than filing tariffs with the FCC.

Given the uncertainty of the environment, protect yourself by insisting on the following key contract clauses:

- **Stabilized prices:** Great pricing is still possible, but don't expect to plow new ground with rate levels. A Fortune 100 company recently reduced its on-to-off rates for switching between the local and long-haul portion of the network to less than $.025 per minute, and its T-1 rates to about $200 per month. The trick, of course, is knowing what constitutes best-in-class pricing in your environment and locking rates down. Otherwise, carriers will continue to raise list prices and surcharges at every opportunity.
- **Solid service-level agreements:** Service levels continue to deteriorate as carriers reorganize and downsize. Cutbacks reduce your support level and problem response times, and increase the amount of time it takes to transition to new technology. Specify these service levels in your SLA, along with remedies for noncompliance.
- **Specific billing protections:** Carriers have made the process of correcting bills and collecting overpayments next to impossible. The best protection is to perform audits regularly yet also retain contract leverage through myriad billing disputes, back-billing limitations and bill payment-related contract clauses.
- **Technology migration protection:** With adoption of VPNs increasing, make sure you have technology change protection in your contract. Essentially, such a clause lets you reduce your commitment and move affected services to a new technology without penalty if the migration lowers your spending.

Sometimes the carrier will ask for right of first refusal to supply the new technology and if you agree to this, the contract must also contain a price competitiveness clause to ensure rates meet the market standards. Another condition to seek is that if the carrier can't migrate you to a new service within a given time frame, you're free to go elsewhere.

- **Carrier bankruptcy protection:** Make sure your contract lets you move penalty-free to another provider if your carrier files for bankruptcy. Unfortunately there might not be enough time to provision services to another carrier, as some customers of part of KPNQwest's network found. Consider using multiple carriers to give yourself a fallback option. Equant and Infonet are offering special pricing for redundant networks you can access if your carrier is forced to stop operations.

But to keep a multiple-carrier environment a viable option, don't overcommit your contract volumes. Carriers have been reaching to the sky in establishing commitments using past standards that are no longer appropriate.

Machtig is a consultant for Telwares Communications. He can be reached at bmachtig@telwares.com.

More online!

Glimpse the future of telecom procurement and consult our list of factors to consider when choosing a new carrier in our Fusion-exclusive content.

DocFinder: 1824

NetworkWorld Review

PowerStruXure UPS

APC delivers lean and mean rack power

■ BY TOM HENDERSON, NETWORK WORLD GLOBAL TEST ALLIANCE

Data Center UPS has never been sexy, but it has always been pricey. American Power Conversion is attempting to tackle the cost issue with new modular, uninterruptible power supply systems that feature availability and monitoring features equal to its battery room-sized competition at half the cost.

Traditional data center power design standards mandate overbuilding infrastructure to accommodate future power requirements. APC's PowerStruXure lends itself to modular protection, which can be deployed and paid for when you need it.

We tested the midsized PowerStruXure system. After a quick vendor-provided deployment, the UPS worked well, although we wanted to see more mature software controls.

The system is designed for 10,000 to 40,000 volt-amps in N, N+1 and 2N systems. We tested a 2N system, which comprised two UPS and two power distribution controllers (PDU). These powered the master control infrastructure for two broadcast television stations, replacing a 208VAC/3-Phase electrical system rated for 20KVA.

APC installs each base PowerStruXure system. This process went off without a hitch. We tested each UPS/PDU by shutting off power to it, with successful results. We also removed power from both feeds. The UPS continued to power the devices under respective loads. (See How we did it, www.nwfusion.com, DocFinder: 1823.)

The system uses one Information Controller and its own Ethernet hub for communications. The Information Controller is a rack PC that serves as a Web server for browsing management information and recording events.

If the primary UPS/PDU combination fails before its redundant member does, no error-log event entry of the outage of the primary member is recorded because the server had powered down and remained offline.

We were surprised to see this single point of failure. In a 2N system, where loads are equally balanced, this is no problem, but the lack of dual redundancy means we scored it a 1.99N system.

Three types of PowerStruXure monitoring are provided: a monitor on the UPS and the PDU that pokes through the door on either rack; a serial interface to the UPS; and Web server-based browser application.

Each UPS and PDU contains an LCD status monitor located just above midrack. The monitor displays are black-on-green in a five-row-by-30-position format, and have several buttons to scroll information and/or make selections. Alarm/status LEDs and buzzers also are located on the monitor.

The UPS and PDU LCD status monitor functions are specific to the devices that they control. In our dual redundant system, we could use each status monitor only for the devices in the rack it was attached to, and could not monitor the other UPS or PDU.

APC offers one year of free monitoring, but won't release an SNMP management information base for the PowerStruXure at the end of this month as originally expected.

UPS on a browser

Two management software applications are available, one via the Information Controller and the other via a serial connection to the PDU.

The Information Controller application is strictly for monitoring, and the application cannot turn off loads, change alarm thresholds or actively change the operation of the UPS/PDU combination. The Information Controller's Web server management application shows management information in a graphical format. Alarm icons correctly pinpointed the problem areas when we intentionally failed various components. Full status of the UPS, PDU, environmental sensors and all loads on the UPS/PDU are easily reached within the Information Controller application. The only features that can be changed or programmed via the browser-based application are the addresses of recipients of e-mail messages, and system contact information.

We were concerned that a logon request to the Information Controller sends the username and password as a URL to the Web server, allowing the usernames/passwords to be easily seen via a protocol analyzer when used with an incompatible browser.

The Information Controller also is used to e-mail alarm and warning conditions to specific target destinations. But mail messages cannot be formatted to accommodate pagers or cell phones.

The direct interface to the UPS/PDU combination is made via serial cable using HyperTerminal, a serial device terminal communications package. Passwords can be entered, as can other system functions, such as warning and alarm threshold settings for power and environmental sensors, PDU restart and software/firmware upgrades. A terminal session is used to connect to the UPS via the serial interface. We found the direct connection user interface to be rough, but usable.

After removing the power from either redundant UPS/PDUs, its percentage of remaining fuel power dropped by 17% for approximately 3 minutes of power outage/fuel burn as viewed via the UPS' integral LCD status monitor. The status application displays fuel burn and discharge at nonlinear rates. This was disconcerting. An administrator monitoring discharge/charge rate after an outage would be over-alarmed at the waffling charge/discharge rate information.

We also were supplied an Environmental Monitor hub, which connects via Ethernet 10Base-T to the integral UPS hub. The monitor contained a temperature and humidity sensor, and four jacks for other devices. When we tested the sensor, we could cause an out-of-range observation by the browser management application, and the warnings were correctly recorded in the Information Controller. But no audible alarm sounded, and it cannot be programmed to make an audible alarm sound; only power problems trigger audible alarms.

The PowerStruXure system does an excellent job of providing modular and extensible UPS protection. It's easy to understand for those that deal with power. The hardware functionality met or exceeded our expectations, but the software controls and system monitoring need a little bit of work.

Henderson is principal researcher for ExtremeLabs in Indianapolis. He can be reached at thenderson@ExtremeLabs.com.

Net Results

PowerStruXure UPS/PDU System

4.25 RATING

Company: American Power Conversion, www.apcc.com **Cost:** $109,000 as configured for a 20KVA/2N system. **Pros:** Modular design cuts cost and factors in growth; strong performance. **Cons:** Software management and monitoring tools need polish.

What's the score?	PowerStruXure UPS/PDU System
Performance 60%	4.5
Management/Administration 20%	3.5
Ease of use 10%	4.5
Installation/Documentation 10%	4.0
TOTAL SCORE	4.25

Individual category scores are based on a scale of 1 to 5. **Percentages** are the weight given each category in determining the total score. ■ **Scoring Key: 5:** Exceptional showing in this category. Defines the standard of excellence. **4:** Very good showing. Although there may be room for improvement, this product was much better than the average. **3:** Average showing in this category. Product was neither especially good nor exceptionally bad. **2:** Below average. Lacked some features or lower performance than other products or than expected. **1:** Consistently subpar, or lacking features being reviewed.

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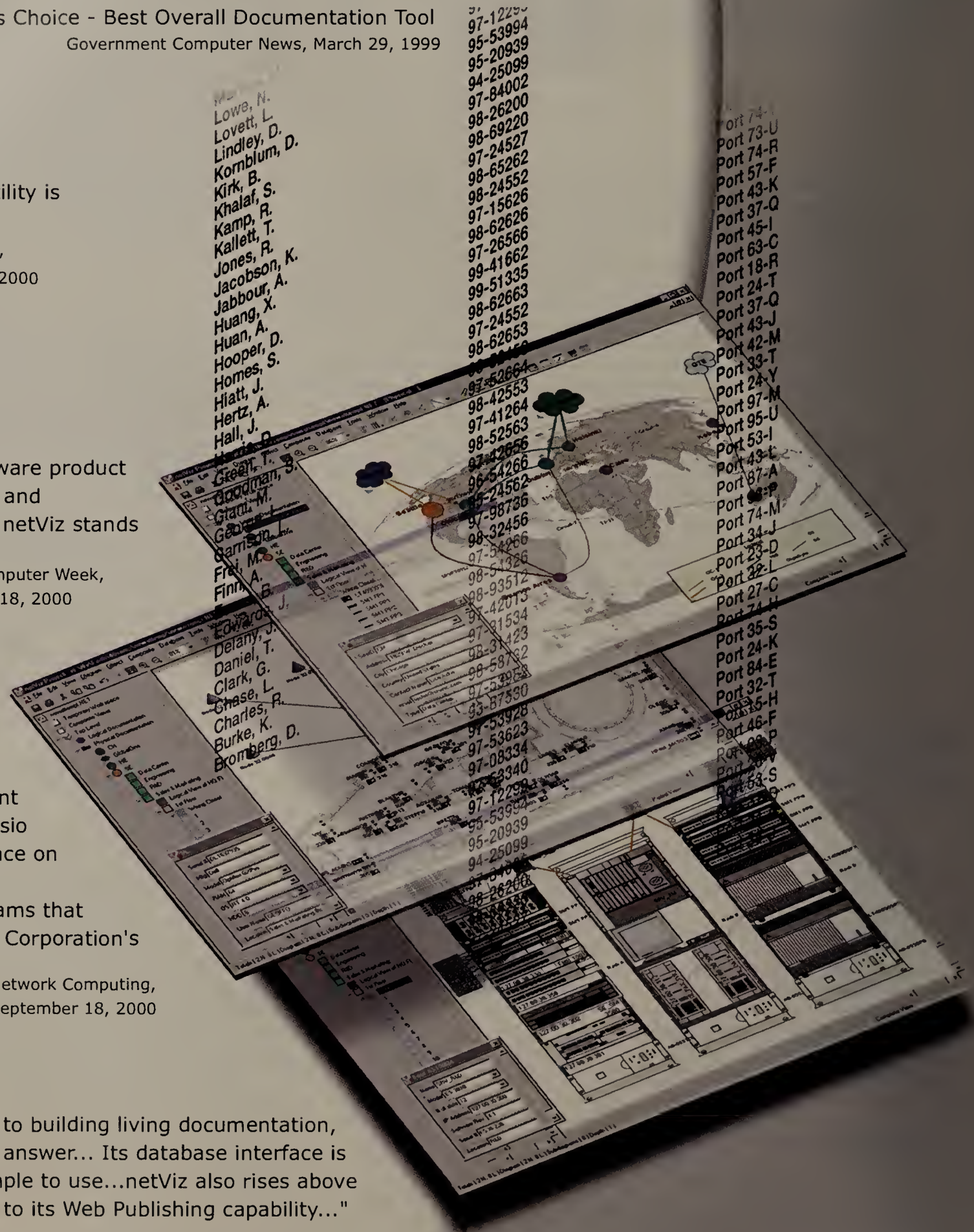

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Trading places

Pending legislation offers corporate IT pros the chance to walk in the shoes of their government peers.

■ BY SUZANNE GASPAR

A proposed public-private partnership between IT workers in the federal government and the private sector could help corporations cut through the red tape of federal contracts and give them a close look at the regulatory pressures, operating structures, and paperwork requirements that various government agencies face.

The Digital Tech Corps Act of 2002 would establish a mechanism for government agencies and companies to exchange midlevel IT management in a six-month to two-year rotation. Workers would cover various IT duties, including systems management, integration projects and security.

Authored by U.S. Rep. Tom Davis (R-Va.), the legislation was passed in the U.S. House of Representatives in April. U.S. Sen. George Voinovich (R-Ohio) introduced a companion bill in February, and it was referred to the Senate's subcommittee on International Security.

The legislation awaits the Sept. 3 restart of the congressional session, but it may be low on the list for the Democrat-controlled Senate. If the measure passes, any differences between the House and Senate versions will be hashed out, passed back for final votes, then presented as a bill for President Bush's signature.

The program would give both groups of participants an opportunity to round out their resumés. Companies placing staff within the government will gain an inside edge on navigating decentralized, politicized departments. Meanwhile, federal workers will siphon off best practices for project management as they train in corporations.

"It's a chance to walk in each other's shoes," says Olga Grkavac, executive vice president for the Information Technology Association of America in Arlington, Va. The knowledge share would improve relationships and understanding on both sides of government contract development.

"Government employees could learn about different contract vehicles, such as performance-based contracting, which are used in the private sector and are still uncommon in government agencies," says David Marin, a spokesman for Davis. In performance-based contracting, the customer specifies the desired outcome and leaves it up to the vendor to determine the process for achieving the specified results.

"Virtually any company that is trying to understand the government as a huge buying center will benefit," says Diane Tunick-Morello, a Gartner analyst. The Digital Tech Corps Act is touted as a big opportunity for nongovernment suppliers because of the government's emphasis on negotiations. Companies that have ties to government contracting will be highly scrutinized to guard against prejudice or a bidding advantage.

Regardless, systems integrators, such as Electronic Data Systems (EDS) and KPMG Consulting, already involved with government contracts are excited about the legislation.

Booth Jameson, director of global and governmental affairs for EDS, says the program gives firms a chance to better understand specific contract details and the daily challenges faced by federal IT staff. In turn, government staffers would gain professional development by training with a high-performance company. "If we help them, and they help us, it will improve everyone's bottom line," he says.

KPMG Consulting also is betting on a win-win exchange, and looking forward to its staff working on reformation projects that will make a difference in the quality of life in the country, says Rich Roberts, senior vice president of Federal Services in McLean, Va. For example, KPMG staff can work with facial and retinal biometric technologies, smart cards and intrusion-detection systems to advance homeland security and protect against cyberterrorism. "The people we would send would be our stars," Roberts says.

Pulling a federal person onboard mandates a look at skills and current projects for identifying the best opportunities, Roberts says. "We'll look across our whole practice to identify what will offer them maximum visibility," he says.

As for eligibility, federal IT workers would participate at the GS-12 to GS-15 level. In corporations, that translates to employees with decision-making authority and at least six years of experience in procurement, enterprise architecture planning, network installation or change management processes. Critical behavioral competencies will include adaptability, political savvy and ability to exchange knowledge and experience gained, Tunick-Morello says.

While the legislation is aiming for a one-for-one exchange, it's not meant to be a quid pro quo. The details of the work parameters of the agreement will be crafted between the two parties, says Mike Dovilla, Senate Government Affairs staffer for Voinovich.

"There will be less concern with letting the federal staff out and more concern with letting private folks inside the walls of the department," he says.

The U.S. Department of Defense is interested, but cautious. There may be some hesitation in allowing a federal employee to be assigned without getting a worker in exchange, says Joyce France, program [illegible] for the Department of Defense's IT workforce in Arlington, Va.

More online!

Read about the proposed public-private IT exchange legislation.

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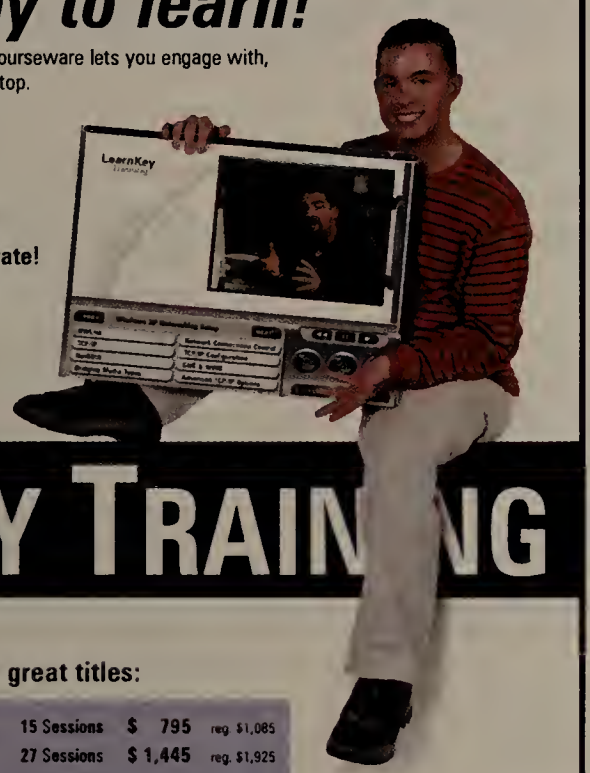

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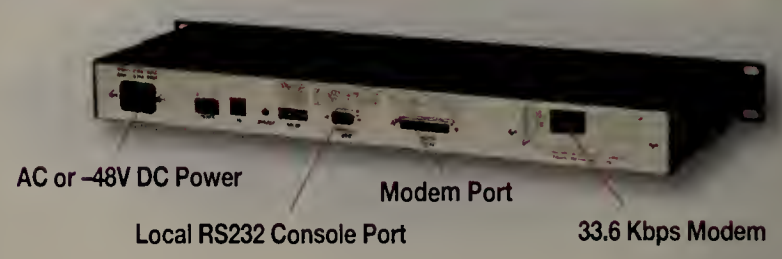

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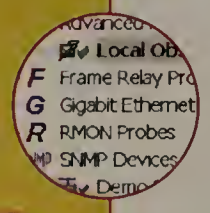

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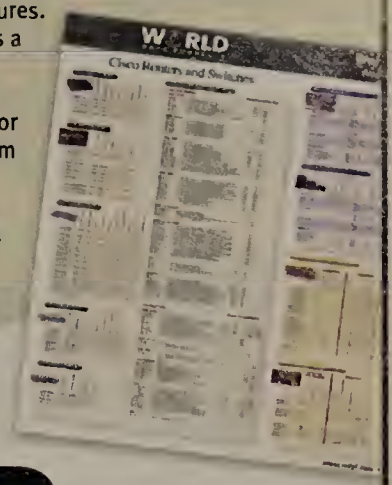

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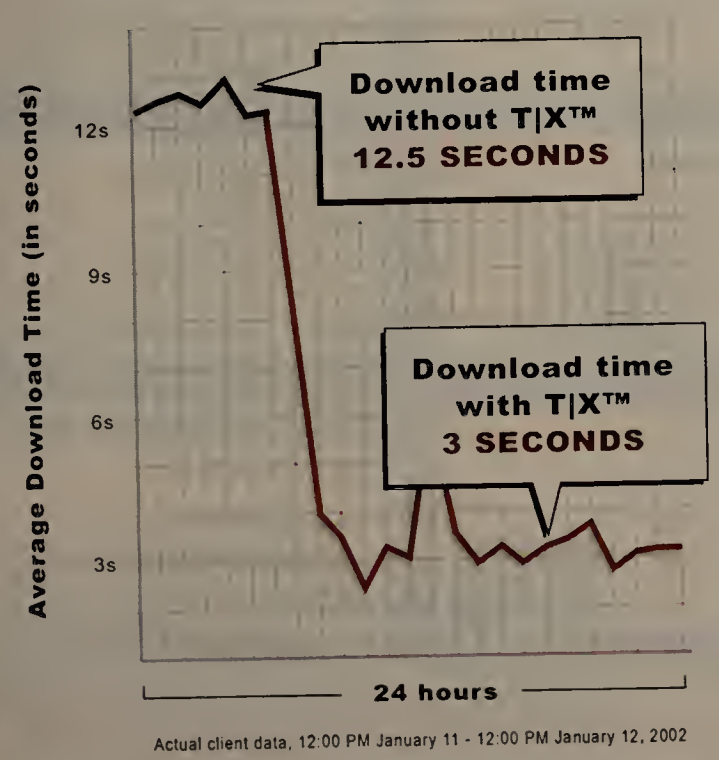

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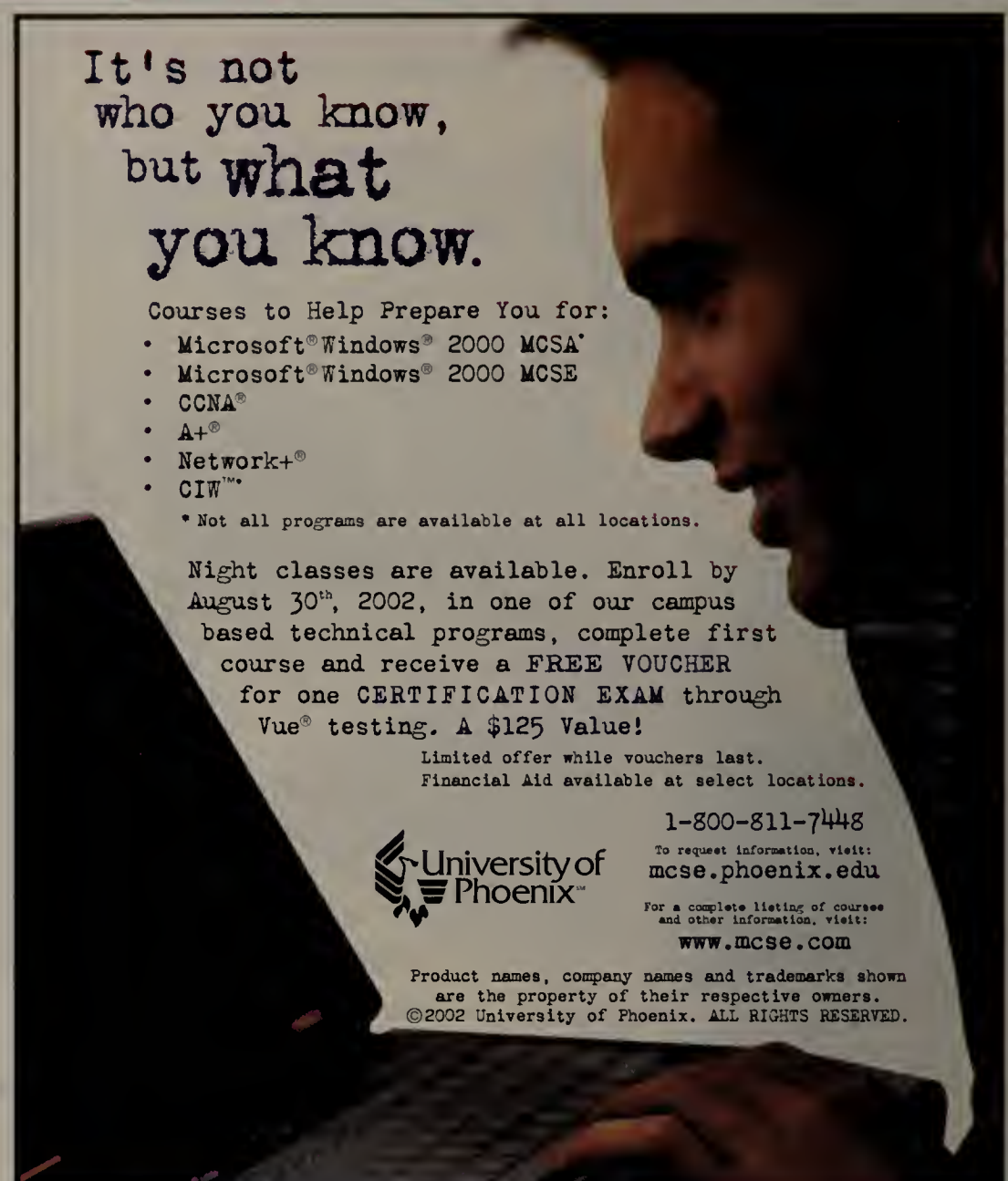

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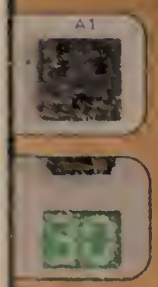

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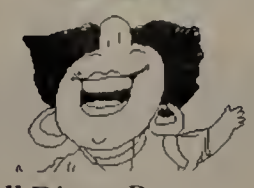

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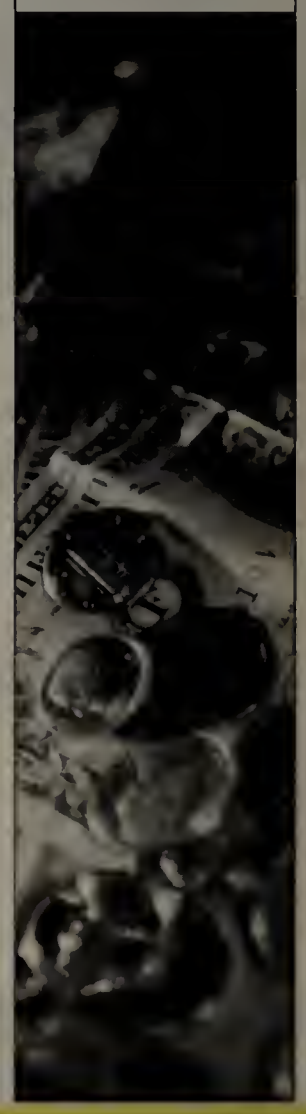

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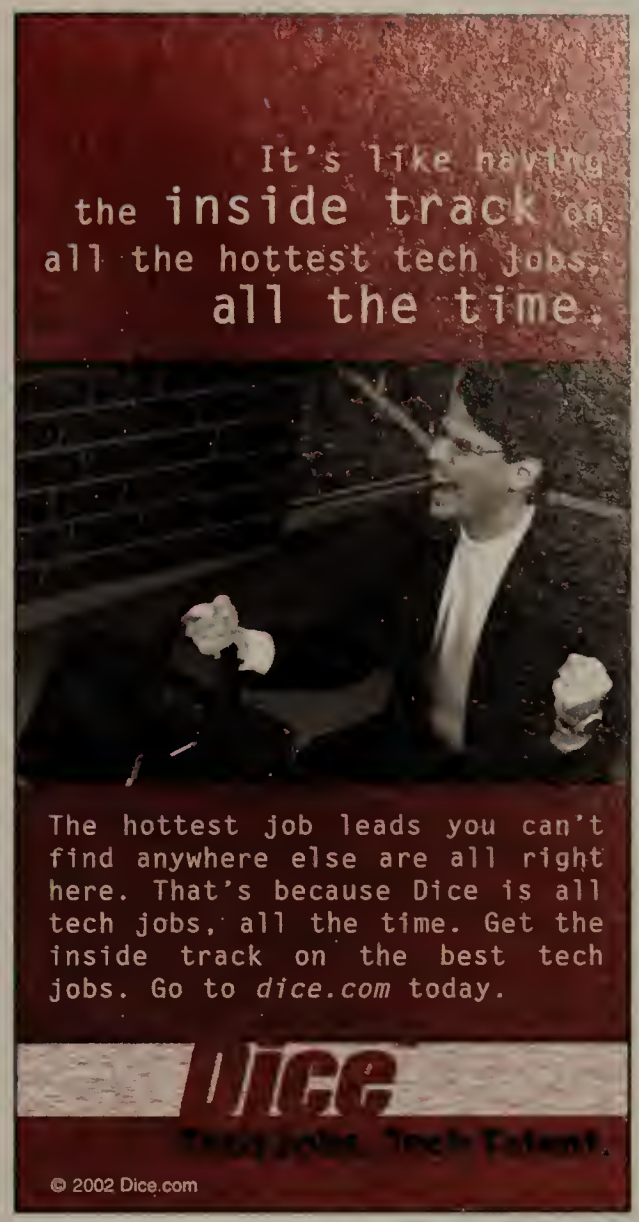

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Linux

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homegrown code from Unix for RISC to Linux on Intel, and the result has been a 50% savings on hardware and software costs. The company also improved its application performance with Linux, going from 100% utilization on its RISC CPUs to around 18% CPU utilization on "Lintel."

With the Linux rollout, "we could say to management that we brought in the [computing power] we needed, and we spent less to do it," Bauer said, adding that he expects around one-third of new in-house applications to be written for Linux.

Industry leaders attempted to harness this kind of user enthusiasm, with keynote addresses from Sun CEO Scott McNealy and Oracle CEO Larry Ellison that highlighted their companies' commitment to Linux.

Along with using his keynote speech as a springboard for Sun's LX50 Linux server launch and the debut of its own Sun Linux distribution, McNealy highlighted Sun's contributions to open source, such as its assistance in porting Java to Linux, and its StarOffice and OpenOffice.org efforts.

"We're glad to finally get invited to be here at LinuxWorld," McNealy said, adding that with open source, "I feel a little like I've been donating to my alma mater for years, and now I'm finally getting tickets on the 50-yard line." He also tried to assure the audience that Sun would play by the rules of open source now that it was fully in the game with its own Linux distribution.

"We aren't interested in taking [Linux] proprietary and getting ahead of the game," McNealy said. "We want to innovate and are not interested in creating a Sun proprietary brand."

Oracle's Ellison used his talk to promote his company's Unbreakable Linux technology, which runs the Oracle9i Real Application Cluster database on clusters of four and eight Linux nodes. Ellison also boasted that Oracle was the first company to port its relational database to Linux and that it has released its Clustered File System technology to the open source community.

"For a long period of time, Linux was the province of the hackers and computer scientists, but you're going to be seeing a lot more suits at these shows in the next few years," Ellison said. "Linux is making its way into the enterprise, and you'll see more and more businesses come to rely on it."

Ellison and McNealy also managed to work in their share of Microsoft jabs — with McNealy referring to Microsoft as "that convicted monopolist," and Ellison saying that his competitor's database simply "doesn't work."

Microsoft's low profile

For its part, Microsoft kept a low profile at what was its LinuxWorld debut.

At its modest booth in the "Rookery" section of the show floor, Microsoft showed off technologies such as its embedded Windows NT operating system, its ASP.Net development tools and Windows Services for Unix 3.0.

"It's kind of good that they are here," said Rajan Saxena, CEO of IP Island, an IT integration and consulting firm. He said he is encouraged by what he sees as Microsoft's acknowledgement that Linux is legitimate.

While Saxena describes himself as a Windows supporter, he said the economic downturn has increased Linux's viability as a server operating system option. "I've been ripping out Windows NT servers and replacing them with Linux for some time now for many of my customers," Saxena said. "Why spend so much money on [a server] that is just being used for file and print?"

Tales of big Unix-to-Linux migrations were abundant at the show. An Amazon.com IT official gave insight into his company's highly publicized decision to migrate its Web and middleware servers from HP-UX to Red Hat Linux on Hewlett-Packard Intel machines. That decision, resulting from the fact that expected economies of scale were not materializing as the company expanded, wound up saving the company $17 million in IT costs earlier this year.

"We decided we had to take a painful but necessary step, which was to move to a large-scale Linux migration," said Jacob Levanon, director of systems engineering and IT. The pain, he said, came in the short 120-day time frame that the company gave itself to move off Unix and onto Linux for its Web and midtier servers, which represent around 92% of Amazon's computing infrastructure.

"The migration to Linux brings a much lower hardware cost because you have so many more choices," Levanon said. He added that HP-UX servers remain in Amazon's data center as the core transactional machines, because the Web merchant's large-scale databases require symmetric multiprocessing power that is beyond Linux's capabilities now. But he anticipates that Linux on a single Intel box will scale to the level of Unix on a RISC machine.

The pace of Linux development was evident at the show, which featured a slew of product and service announcements. These included:

- The companies behind UnitedLinux, an effort to deliver a common version of Linux, announced a closed beta version of the distribution is available to partners, with a general beta release to the open source community due next month. UnitedLinux members include Caldera, SuSE, TurboLinux and Connectiva.
- Red Hat announced it will support Advanced Micro Device's soon-to-be-released 64-bit processor architecture. Red Hat also released a beta version of its Linux distribution for corporate desktops, code-named Limbo.
- Dell said it has doubled the number of nodes it can support in a Linux cluster from 64 to 128. The company also announced enterprise Linux services, such as project assessment and Unix-to-Linux migration support for custom-written Unix applications.
- HP announced Servicecontrol Manager 3.0, a tool that can be used to configure and perform health monitoring on Linux servers.
- Computer Associates announced offerings for helping businesses better manage Linux Virtual Machines on IBM mainframes. CA's Unicenter Software Delivery for Linux on the mainframe could help administrators update and patch Linux server instances on an IBM zSeries server or mainframe. A version of Unicenter ServicePlus Service Desk for Linux on the mainframe could help businesses automate how help desk issues are handled with virtual Linux servers.

More than 140 companies displayed wares at the show, compared with 180 at last year's San Francisco LinuxWorld. Attendees numbered just more than 20,000 — 2,000 more than last year, according to IDG World Expo which produces the show and is a subsidiary of IDG, which owns *Network World*. ■

"For a long period of time, Linux was the province of the hackers and computer scientists, but you are going to be seeing a lot more suits at these shows in the next few years."

Larry Ellison
CEO, Oracle

Linux by the numbers

- Linux revenue is expected to more than triple from $80 million last year to $280 million in 2006.
- Linux revenue fell 5% from 2000 to 2001, though Windows was the only operating system with revenue growth over that period.
- New Linux server operating shipments were flat last year vs. 2000, whereas client shipments increased by 50%.

SOURCE: IDC

Linux, beyond the enterprise server

An underlying theme at last week's LinuxWorld Expo was that there's more to Linux than just an inexpensive enterprise server operating system.

In one session, independent security consultant David Allen discussed how Linux is being deployed along with powerful open source security tools to sniff out intruders and lock down networks from internal and external attacks.

"The best security tools are open source security tools," Allen said. As opposed to proprietary systems that perform packet sniffing or intrusion detection, Allen said tools such as Prelude, Tripwire and Snort (which is available as a commercial appliance, too) are better because the code has been through the open source peer review process.

Allen said such tools appeal to many security professionals because of the openness of the software. "People who run security want to look under the hood and get their hands on the code of the system they're using," he said.

Linux on the desktop was another hot topic at the show in light of Hewlett-Packard's recent move to offer Linux on all its Evo business PCs, hints from Sun of an upcoming Linux desktop and a new Red Hat beta for corporate desktops.

A 30-workstation Linux lab for students at Indiana University's theater department was given as an example during one session on how Linux on the desktop can win over end users.

"If you want people to switch from Windows to Linux on the desktop, you have to make it as easy for them as it would be to move from one version of Windows to another," said Corey Shields, Unix systems specialist at Indiana University, who oversaw the Dell-based Linux desktop deployment and plans to roll out Linux to other labs on the 94,000-student campus in Bloomington.

Linux desktops such as KDE and Gnome — both of which ship with most Linux distributions — often cram many applications and icons onto a desktop and in menu and task bars, Shields said. That can confuse end users who may just want to surf the Web or edit documents.

"To design a desktop for Windows users, you have to see things through their eyes," Shields said. The key, he said, is using tools within Linux to clearly label what programs certain icons launch and paring down the number of icons end users can see.

— Phil Hochmuth

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Scumware

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passwords, deliver personalized content or block cookies. But its makers' real intent is often to display ads that have been provided by paying advertisers, or route its users to the Web sites of sponsoring companies.

In practice, scumware does things like float pop-up ads over Web content and advertisements, insert its own hyperlinks into a user's view of a Web page, and reroute existing hyperlinks to unauthorized sites. Imagine ads for "Company A" popping up on the screen of a user perusing "Company B's" site. Or the phrase "flight reservations" hyperlinked to take a visitor from one airline's Web site to the Web site of a rival.

Creators say it's lawful, effective, targeted advertising.

Web site owners argue that such uninvited links and ads hurt their revenue opportunities, damage relationships with their official advertisers and imply endorsements that don't exist.

Some Web site operators are fighting mad — notably several publishers including The New York Times Co. and Dow Jones, which this summer filed a lawsuit against software maker Gator for allegedly violating copyrights and stealing revenue.

Gator makes software that manages passwords and fills out forms for Web surfers. In exchange for the free management software, users are fed pop-up ads. Gator used to make some of those ads the same size as some Web site banner ads and position them directly over authorized Web page ads — a practice it stopped in November, the company says. Gator still serves pop-up ads, but the size and positioning of those pop-ups do not cause direct ad overlays.

While the publishers' lawsuit against Gator is pending, the plaintiffs scored an early victory in July. A U.S. District Court judge in Alexandria, Va., issued a preliminary injunction against Gator that bars the company from delivering ads to the plaintiffs' Web sites, at least temporarily.

Meanwhile, Gator defends its advertising practices, which the company insists are not copyright infringement because there is no copying or modifying of the plaintiffs' Web sites, or any other material.

> **"Consumers have opted to receive free software in return for occasionally receiving these advertisements. . . . What happens on these users' screens is the users' business and choice, not the plaintiffs'."**
>
> **Jeff McFadden**
> CEO, Gator

"Consumers have opted to receive free software in return for occasionally receiving these advertisements," said Gator CEO Jeff McFadden in a statement on the company's Web site. "The 22 million PCs that comprise the Gator Advertising and Information Network [GAIN] are owned and operated by 22 million consumers, not by a handful of Web site publishers. What happens on these users' screens is the users' business and choice, not the plaintiffs'."

Raising the ire of users

Legal or not, the methods of Gator and others continue to raise the ire of many users.

One *Network World* reader wrote in response to a newsletter on the subject that he finds products such as Gator to be even more obnoxious than spam. He's glad to hear about the lawsuit: "I am thankful that someone with a little muscle is taking them to task," wrote the systems administrator.

Another reader wrote that he doesn't object to Gator's marketing intent, just its installation tactics: "I have no problem with marketing, I don't like the way Gator installs itself without the knowledge of the user. I have had to remove it from my PC numerous times even though I haven't ever purposely installed it. I am an IT professional and am very aware of what I click on when surfing the Web."

Critics take issue with many scumware providers' software distribution tactics. Often the software is bundled with another program. Though users authorize the download, it's not always clear what they're getting.

For example, TopText is bundled with other software, including the KaZaA peer-to-peer file-sharing software. TopText from eZula is a browser plug-in that adds hyperlinks to a user's Web view. Users can identify keywords that interest them; in addition, sponsors can purchase keywords or phrases that redirect TopText users if they click on them.

Gator declined to discuss its software-bundling partnerships. But published reports say Gator software is bundled with Webshots, a free screensaver program, and DivX Pro Video Bundle, a program for creating and viewing videos in the DivX video format, among other pairings.

On its Web site, Gator refutes the contention that users are unaware they have installed Gator software: "All authorized distribution of Gator Corporation software products are 'permission-based' and require an active consumer action before the software is downloaded and installed. In addition all users receive multiple communications during the process. . ."

Raises privacy issues

Ad etiquette aside, scumware raises security and privacy issues for corporations when users download such applications on company PCs. To perform ad-serving and Web-tracking functions, scumware applications typically attempt to communicate with servers outside the corporate firewall.

Jim Henderson says many users have downloaded Gator at his employer, Washington Suburban Sanitary Commission (WSSC) of Laurel, Md. Henderson, who is a network engineer at the public water utility, says 200 to 300 of WSSC's 1,500 employees have installed Gator. He speculates that Gator made its way into WSSC users' systems by piggybacking on Webshots screensaver software, which is popular with users at WSSC.

WSSC has policies restricting frivolous downloads, but they are not enforced.

"We are not strictly enforcing people who download unauthorized software, other than to remove it if it causes a problem," Henderson says.

And Gator has caused problems, he says. It sometimes causes error messages when users launch their Internet Explorer browser; uninstalling Gator stops the error, he says.

He's also heard from co-workers that Gator can cause Windows NT machines to crash. When that happens, rebuilding a user's system takes two to three hours, Henderson says.

Help available

To help companies with scumware blues, security vendors offer programs to identify, cleanse or handicap applications that don't belong on corporate networks.

Ad-aware from Lavasoft is a free removal utility that scans memory, registry and hard drives for known spyware and scumware components. Originally intended for personal use, a network-compatible version is in the works, says Lavasoft spokesman Michael Wood. Ad-aware 6 will let companies scan all their users' computers and drives from a central location, rather than having to install and maintain Ad-aware on each PC. The new version is in early alpha testing now, and Lavasoft will begin beta testing later this month.

Offender?

To see if the product you are thinking of installing is scumware, check the lists of known offenders at:

www.freegraphics.com/zz-scumware/

Symantec this month started shipping desktop software that combines antivirus, intrusion-detection and firewall protection. Aimed at corporations, Client Security protects against attempts by unauthorized applications to communicate over the Internet, says Timo Kissel, senior director of program management at Symantec.

Similarly, Zone Labs offers its Integrity line, which can stop unauthorized applications that try to connect to the Internet.

WSSC's Henderson says greater vigilance is warranted. "We could do better in providing security-awareness training to employees," he says. "Strictly enforce unauthorized software downloads and restrict local admin rights being given to users unless it is necessary." ■

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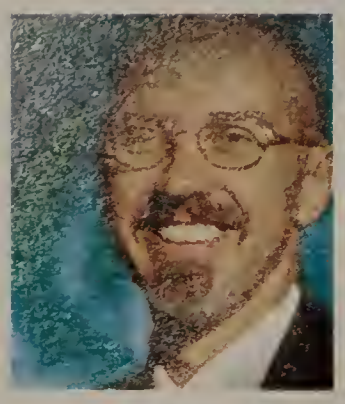

Catching up on reader comments

This week we'll follow up on comments generated by a couple of previous columns. First, regarding last week's column (www.nwfusion.com, DocFinder: 1852), about online cons and VeriSign, reader Brad Andriese commented:

"You're right on the money, Mark, but it clearly does not take a bad (and likely illegal) marketing campaign to identify a bad company. I don't think we need to spend too much time on VeriSign regarding these practices. If VeriSign stays on track, they're headed right into the ground all by themselves. By the way, do you know any other good organizations to hold my domain names? I'd love to move all our domains to another organization, but I'm just not sure (yet) which one to choose. I want one that is simple and reliable. Not a fly-by-night outfit."

Anyone got a suggestion?

Also regarding last week, Tony Porasky wrote regarding my comment that even the government could run a less bureaucratic and more responsive operation. He added: "The only thing missing from that quote, to make it perfect, is to add 'and make a profit while doing it, too!' I sure hope you don't believe what you wrote."

Next, following on from the column from the week before (DocFinder: 1853), reader Ken Blair complained that the price of Lindows isn't low enough:

"[The] $99 price for Lindows is the same as Windows XP Home Edition upgrade version, so that's the same price assuming one already has a Microsoft operating system that's upgradable to XP Home. If the prices are the same, there's little reason for some people to switch."

He goes on to say: "I have attempted to replace my Microsoft-based workstation with Linux a couple times and have mixed results. The greatest problem was no direct access to the Exchange server. And even when I could access it, I'd still be using a Microsoft license when I accessed it. The only 100% [solution] is to get rid of the Exchange server and thus the licensing it requires."

Another reader commented: "I am reading your column using my Lindows system, which coexists very nicely with Windows ME. I am pleased with the stability of the program, and I have most of my existing Windows programs running under Lindows. . . . I use Win 2000 at work and if I had my choice, I prefer Star Office under Lindows, as it seems much more secure. I have not yet had a program crash to the extent under Lindows where I have had to reboot the computer. . . . To have a stable operating system without having to worry about individual programs corrupting the system on a crash is well worth the $99 I spent on the program."

Rick Berenstein opined: I do indeed believe that Linux on the desktop will eventually break the Windows monopoly, especially with its low total cost of ownership in the current difficult worldwide economy.

"It is unfortunate that you chose to offer up Lindows as the Linux operating system that is spearheading this movement. The Lindows operating system has now been roundly lambasted and criticized [in the press] . . . the partial Windows compatibility offered by Lindows' WINE technology has been superseded by other programs, including CodeWeavers Cross Over Office.

"The most stable element in the whole Lindows package is the Linux core that it runs on, which was developed by Xandros in Canada. The proof of the pudding is that when you start up the Lindows operating system the first splash screen you see says 'Lindows OS — Powered by Xandros.' I believe that when you see the Xandros Desktop you will be getting your first look at the real Linux product that will break Microsoft's Windows."

I hope to get my hands on both Lindows and Xandros soon, so expect to see reviews if I can get Gearhead to stop with the music.

Groove to backspin@gibbs.com. Yeah, baby!

'NetBuzz News, insights, opinions and oddities

By Paul McNamara

What if that e-mail became public knowledge?

There's nothing quite like seeing company secrets — or dirty laundry — plastered all over an Internet bulletin board to get otherwise somnolent corporate executives excited about spending money to tighten up e-mail security practices.

That's the dynamic Omniva Policy Systems is banking on this week as it releases Policy Manager Enterprise Edition and Wireless Gateway. These products are designed to prevent proprietary information from being spread hither and yon via e-mail — through carelessness or malicious intent — and to enforce document retention policies.

Omniva executives insist that their system will succeed where other e-mail security schemes have failed because they have made deployment and rules implementation easier for the network executive, and the exchange of e-mail for sender and recipient all but idiotproof. They also say that worries about wireless e-mail exacerbating security risks have generated intense interest in the gateway product.

Policy Manager lets administrators assign e-mail rights and restrictions universally across the organization and granularly, in that employees can be granted different sets of privileges. Designations for individual messages include "company confidential," which means the e-mail cannot be forwarded to the outside world, and "do not forward," which means it cannot be read by anyone not on the original recipient list.

The system also can make all copies of a message disappear after a preset time period, whether that's a certain number of years mandated by law for financial and human resources records, or days for run-of-the-mill e-mail that too many users pile far too high for no good reason. (The company used to be called Disappearing, Inc.)

The payoff comes not only through better compliance with retention regulations, but also in costs avoided should your organization be asked to comb through archived e-mail as part of a lawsuit . . . smaller archives mean less combing.

Omniva acknowledges that Policy Manager is not foolproof. For example, the system will not stop the determined mischief-maker from simply retyping a confidential corporate e-mail into a new file and forwarding it to his favorite trade-press columnist. Or, if we really want to get "cloak and dagger" about things, that scoundrel also could take a picture of the screen.

However, the company makes a compelling case that less-than-perfect protection beats the stuffing out of what most organizations have today, which amounts to little more than praying that people will do the right thing.

Of course, given the current economic malaise, even the combination of a pressing need and a nifty product can be no guarantee of success. CEO Kumar Sreekanti worked for Akamai before taking the helm at Omniva, which may explain his reply when asked if the lousy business climate might hurt his company:

"This is an easier sell than me walking in and saying I'll speed up your Web site."

Beaten to the punch

The boss comes charging into my office last week all excited to tell me he has "an idea that's going to make you famous."

"You mean more famous, right?"

"Yeah, more famous," he says, eyes rolling into the back of his head.

The idea: Launch a Web site where baseball fans can register their vows to foreswear the game for a year if the players go on strike Aug. 30 as threatened.

It was an excellent suggestion, which probably explains why a number of such sites already exist.

And even though there appears to be cause for optimism that sanity will prevail and a strike will be averted, we provide these links as a public service: www.mlbfanstrike.com, www.wethefans.com and www.baseballfansunite.org.

Or you could always just take a few swings here. The address is buzz@nww.com.

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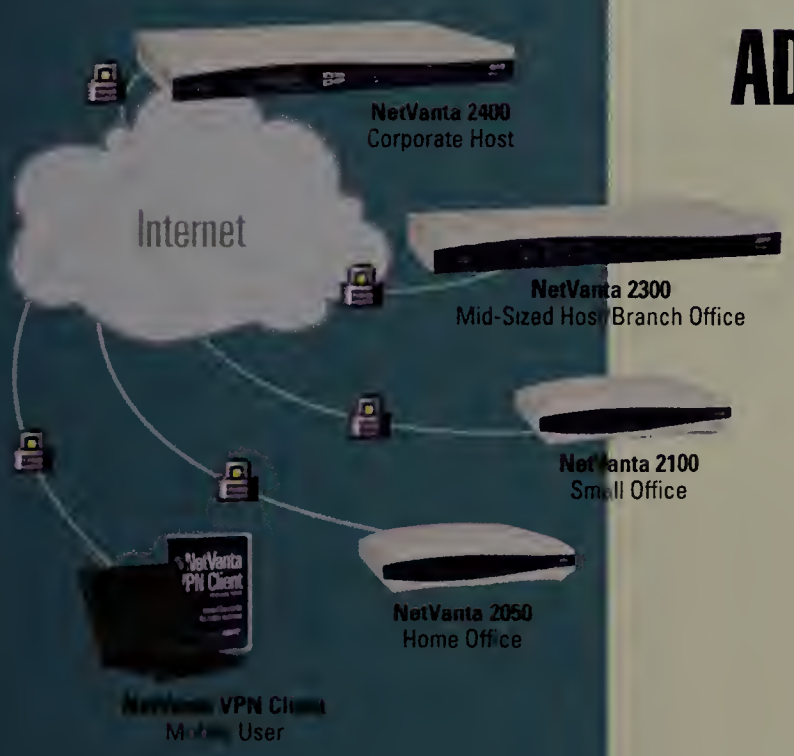

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